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An introductory graduate level course curriculum for Futures Studies was conceived, designed, and tested within the Cybernetic Systems Program and the Instructional Technology Department, School of Education, California State University, San Jose. The curriculum consists of a series of 15 learning modules including 2 devoted to a standard study procedure, and 13 treating the following concepts: the time-line appraising futures reports; futures studies methods; change; alternative futures; forecastability; confidence in forecasts; attitudes toward futures; causality and futures; manageability of futures; values and futures; transcendental change; and stability. An experimental offering of the course emphasized student development of multimedia presentations and demonstrated the basic viability of both the curriculum and the multimedia approach. (Author)

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A GRADUATE-LEVEL SURVEY OF FUTURES STUDIES: A CURRICULUM DEVELOPMENT PROJECT

August 31, 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

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U.S. DEPARTMENT OF
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AUTHORS' ABSTRACT

An introductory graduate-student level course curriculum for Futures Studies was conceived, designed, and tested within the Cybernetic Systems Program and the Instructional Technology Department, School of Education, California State University, San Jose. The curriculum consists of a series of 15 Learning Modules, including two devoted to a Standard Study Procedure and 13 treating the following concepts: The Time-Line, Appraising Futures Reports, Futures Studies Methods, Change, Alternative Futures, Forecastability, Confidence in Forecasts, Attitudes Toward Futures, Causality and Futures, Manageability of Futures, Values and Futures, Transcendental Change, and Stability. An experimental offering of the course emphasized student development of multi-media presentations and demonstrated the basic viability of both the curriculum and the multi-media approach.

ACKNOWLEDGMENTS

Perhaps even more than most efforts, a curriculum development project in a new field is necessarily a collective, collaborative effort. While we ourselves must be held responsible and accountable for the curriculum we have developed for futures studies instruction, we wish to acknowledgment specifically a few of the many persons whose contributions to the effort we found especially helpful.

Contrary to convention, first and foremost we wish to express our appreciation to our wives, Rita Moss Hunt and Virginia Finley Miller. Ms. Hunt provided an appropriate project name--ADVENT--and by her own example and serious work in another field reminded us constantly of the indispensable value of intuition and arational perception in striving to foresee possible futures. Ms. Miller served nobly as insightful critic and proto-student in working through the many versions of concepts and learning materials outlines such a project necessarily entails; she also served as production coordinator for this final report.

We wish also to thank our department chairmen at California State University, San Jose: Professor Norman O. Gunderson, Chairman of the Cybernetic Systems Program and Dr. Harold Hailer, Chairman, Instructional Technology Department, School of Education. Their encouragement and support in our "high-risk" academic venture has stood us in good stead, as has their service on the Project Advisory Working Group.

Special thanks must also be given to the other members of the Advisory Working Group, as listed in Appendix D of this report. The AWG's counsel was especially valued in making the project design transition described in Section III of this report. Within the AWG, special note is taken of assistance rendered as AWG Coordinator by Mr. Peter L. Shoup, President, Pacific House, California whose firm also provided space, clerical support, and information dissemination assistance for the project. Another AWG member, Mr. C. Cameron McCauley, Director, Extension Media Center, University of California provided important assistance by cooperating in a related project to review and evaluate some 150 futures films for inclusion in our Learning Guide, Appendix B (Section 17) of this report.

Uniquely valuable assistance was rendered by the twenty graduate students in the Cybernetic Systems Program at California State University, San Jose who submitted themselves as "guinea pigs" and project collaborators in the course of our experimental course offering in the Spring semester, 1972. We have recorded their names with gratitude in Appendix E to this report.

Also in relation to the experimental course, we wish to thank Mr. Robert Theobald and the Bobbs-Merril Publishing Company of Indianapolis, Indiana for making available to us copies of the pre-publication edition of Mr. Theobald's useful new futures studies textbook, Futures Conditional which was used and evaluated for the first time in our experimental course.

We must also acknowledge with our deepest sincere thanks the information and recommendations provided us by our futurist faculty colleagues in the United States and abroad. We wish to make special mention of Dr. Billy Rojas, Alice Lloyd College, Pippa Passes, Kentucky; and of Professor H. Wentworth Eldredge, Dartmouth College, Hanover, New Hampshire. Rojas' and Eldredge's pioneering efforts to track the evolution of futures studies instruction in U.S. colleges and universities greatly facilitated our own work. Dr. Dennis Livingston, pace-setting futures studies instructor formerly at Case-Western Reserve University, Cleveland, contributed substantially to our Learning Guide (see Appendix B, Section 16). Other trailblazing futurist faculty to whom we wrote or with whom we made other contact are gratefully acknowledged and listed in Appendix C to this report.

Finally, we wish to express our intense appreciation to the U.S. Office of Education Regional Research Program (Region IX, San Francisco, Dr. Walter Hirsch, Director) for the grant which has made the present project possible. It is our hope that the investment made will bear continuing fruit as other futurist faculty draw on what has been done here to surpass it in future futures studies instruction in American higher education.

PREFACE

Introduction

This report, like many others, documents beyond reasonable dispute that Futures Studies and Research (hereafter, FSR) has arrived on the intellectual scene and is not apt soon to depart. Why? Futurist and sociologist Daniel Bell offered one of the first and best explanations to which the reader is commended: "The Study of the Future," The Public Interest, Number 1, Fall 1965, pages 119-130.

Just as the origins of any new intellectual departure can be traced to the societal climate in which the new departure appears, so it is reasonable to think that the subsequent development of the new departure is shaped by and relevant to that same societal climate. In this prefatory essay, we offer a general discussion of possible links between FSR and the societal climate in our era. Our remarks are intended to prompt discussion and debate and should be taken as suggestive rather than as definitive.

We begin by listing ten dilemmas and ten opportunities confronting humanity in our time. We then identify what seems to us to be the seven most central or fundamental aspects of FSR, and try to relate these to the dilemmas and opportunities already mentioned.

Ten Dilemmas In Our Era

A listing of fundamental human ills may consist of one item--"we exist"--or may be of infinite length. Our list is meant to be suggestive of our own perspective rather than exhaustive. Our list includes ten items:

1. We share no common vision.

"WE" in this and in all other items below refers simply to humanity, to all of us now living on this planet.

Advances in communications technology and transport technology have thrust us all willy nilly into one single, earth-wide "central place." But we are not ready for it. Even as Americans or Belgians or South Africans we are not ready for it. As Terrestrials, we are so far completely lost. What possible common vision can be shared by the starving wretch on the streets of Calcutta *and* the affluent multi-national corporate executive in Westport, Connecticut? Even the cataclysm of World War II resulted only in the United Nations--a mere shadow of its never self. Yet we know that the fate of Cedar Rapids, Iowa *is* bound inextricably to the fate of, say, the rice paddies of Viet Nam. In this surely lies a basic dilemma of our time.

2. Our sense of human continuity is shattered.

In the many millennia which preceded the rise of modern technology, human beings perforce struggled only to comprehend "the world" well enough to survive by adapting to it, by "fitting in." This basic premise of civilization has been substantially swept away during the course of the past century or so. Within limits so broad and vague that for many purposes they do not even exist, we have come to realize that we can make "the world" conform to *our* desires--*if* we are prepared to pay the ultimate price. In technology's yeasty youth, this basic transformation of the human condition was celebrated with unreserved joy. No longer was it a matter of Man Under Nature; now it had become a matter of Man Over Nature.

More recently, we have begun to see some of the hidden costs in the ultimate price. Now we are beginning to aspire to the status of Man *In* Nature. But in any case the seizure by men of powers once reserved to God or Nature has shattered the fundamental sense of inevitable continuity in human affairs, on the basis of which civilization evolved. Now few can ever be sure about much for long. Here is Alvin Toffler's famous *Future Shock*.

3. The scope of our engagements is too narrow.

Collective knowledge has in recent decades expanded much more rapidly than has the individual's capacity to acquire, absorb, and apply knowledge. Our unsuprising response has been to specialize. Each of us saws off that infinitesimal fraction of the whole which seems of most interest or value to him. As for the rest ...well...someone else...But we are beginning to see that this approach may bear a prohibitive cost. Intractable residues claimed by no one can create grave crises for us all. No one realized beforehand that Lake Erie was being murdered. Many of the most crucial bits of knowledge are elusive, embedded in complex relations among many more immediately obvious bits. We find that we must know more than we can know. Herein is a dilemma.

4. We cannot manage complexity and interdependency.

This is an activist elaboration of Point 3. above. Knowing that fragmentation of knowledge and issues is dangerous is one thing. Knowing what to do about it is quite another. Welfare reform, structural unemployment, health care delivery, mental health services--in these and in countless other matters we see the folly of the piecemeal approach but simply don't know how to improve our performance. A dilemma, surely.

5. Our societal institutions are obsolete.

Here again, the dilemma is an extension of the preceding one, but again it has even broader dimensions. We have already alluded to the shattering of our human sense of continuity in "the world." This development in its present dimensions occurred after the evolution of virtually all existing societal institutions and organizations. All such structures evolved in a world where continuity was the rule and discontinuity was the rare exception. Institutions and organizations all essentially have been created to regularize and stabilize predictable, recurrent societal functions: marriage, war, production, governance, etc. When we rage and rant about bureaucratic inertia we may forget that by their nature societal institutions and organizations always strive first to achieve what they were established to do: maintain some status quo. The dilemma arises in the extensive displacement of continuity by discontinuity as the prevalent societal experience. Most of our gravest challenges and our brightest opportunities arise from change, from discontinuity, phenomena which virtually no societal institution or organization can effectively address.

6. We cannot reconcile diversity and community.

Human beings apparently require both some sense of unique worth and some sense of communal identity with other human beings. Person-group relations always have been at the root of societal tension--sometimes with magnificent results, sometimes with tragic consequences. In our era, the shrinking globe forces into the immediate presence of each of us the complete range of human diversity. And this development is occurring in the substantial absence of any vision of world community. At all levels--from neighborhood to globe--we simply do not know how to celebrate both our differences and our similarities in any consistent fashion.

7. The person and the people are mutually isolated.

On its face, this dilemma may seem to contradict the one mentioned in Point 6. above. Essentially, however, it is another face of the same coin. Proximity per se--whether physical or through some medium--is no guarantee of communion. Familiarity truly can and often does breed contempt, suspicion, and hostility. The shrinking globe obliges us constantly to acknowledge how many "strangers" there actually are in our world, even as we find it more and more difficult to remain in touch with those who are "like us." This dilemma is perhaps nowhere more visible at present than in our agitated suburbias.

8. We cannot agree about aspirations, constraints, and priorities.

Perhaps this dilemma merely restates the absence of a common vision suggested in Point 1 above. Whether or not this is so, our complex, interdependent, technological society requires such a consensus but has yet to achieve it.

9. We cannot reformulate principles of justice and equity.

While this dilemma is subsumed under Point 8. above, it remains fundamental enough in its own right to deserve special mention. Intertwined with many others, this dilemma perhaps stems foremost from the dilemma of discontinuity. Discontinuity requires frequent redefinition and concurrence as to what are resources, rights, privileges, duties, and obligations. It seems that nearly everyone believes himself entitled by natural right to whatever he has or may be able to obtain in future. Redefinition of resources et al must always be viewed by some as destructive of their inherent just claims, while those who gain by redefinition are apt to see in their gains only an overdue acknowledgment of their just claims. So long as societal discontinuity is substantial and basic human attitudes remain the same, the reformulation of principles of justice and equity must remain a dilemma.

10. We do not trust each other. This dilemma requires no elaboration. It is in effect the dilemma, of which all the others named are merely reflections.

Ten Opportunities In Our Era

Listing contemporary human opportunities is more risky and controversial than listing contemporary human dilemmas. Any one or all opportunities listed here may be held by any reader either as not attainable, not fundamental, or as threats rather than opportunities. In our view, however, opportunities must be imagined before they can be perceived, and perceived before they can be exploited. If the reader finds our list unsatisfactory, we urge him to prepare his own in the interest of our common salvation.

1. We can improve our understanding and management of human behavior.

Futurist Olaf Helmer has coined the phrase "social technology" in referring to the many solid insights we have about human behavior which cannot be directly supported by Grand Theory. Helmer's plea is that we ignore theoretical inadequacies and apply such "lore" wherever it proves useful. Beyond social technology,we seem to be on the brink of a new era in the behavioral sciences when new concepts, new methods, and new tools--especially the computer--may help us attain a much broader and much deeper understanding about "human nature."

2. We can learn to control the evolution of technology.

"Progress" with a capital "P" was long regarded simplistically as a matter of doing all that we could as soon as we could. From that perspective, Technology with a capital "T" was king and could do no wrong. Today, pessimists such as Jacques Ellul warn that the Technological Imperative is an irresistible Juggernaut whose momentum must bear us inevitably to our destruction. To us, the pessimistic case seems at least premature if not overstated, since only now are we deciding that we want to regulate the development and use of technology. While Technology Assessment, for instance, is little more than one first, faint beginning in this direction, in our view the emphasis properly should be placed on "beginning" rather than on "faint."

3. We can better balance competition and cooperation.

Universally, social behavior is some blend of competitive activity with cooperative activity. Competition breeds leaders, cooperation breeds lovers, and society requires both. Society must constantly readdress itself to the issue of when and where each type of behavior is most appropriate and useful. If as it appears society will be increasingly complex and sensitively interdependent, it seems to follow that society must be redesigned to place greater emphasis on cooperation and collaboration. While manufacturers need not necessarily compete less in the marketplace, they must be given adequate societal incentive to cooperate more in cleansing the environment, to cite a familiar example. And since human beings seem by their nature to be both competitive and cooperative, society can aspire to elicit the most appropriate behavior in any given circumstance.

4. We can reconcile the claims of reason and sentiment.

Reason is not necessarily identical with sanity, nor is sentiment always senseless. Our preoccupation with technology may have embued us with too much respect for whatever can be carefully counted or measured. "What is so rare as a day in May?" the poet inquired. Had his views weighed more heavily in the societal scales beside those of Detroit, perhaps the Los Angeles Basin today would be less a disaster area. By the same token, militant environmentalistswho demand an instant end to all economic growth deny the claims of justice and equity as well as those of reason. We humans believe in and value many things which have not been and often cannot be "proven." Such being the case, we should be able to find new ways to bridge the often-critical gap between being "rational" and being "reasonable."

5. We can reconcile personal fulfillment and societal progress.

Max Stirner once wrote, "A people cannot be free otherwise than at the individual's expense. We in our era have the opportunity of refuting Stirner's thesis--at the risk of proving him correct. We must--and can--reexamine the nature of liberty in a technological society. Many of our former prerogatives obviously have been taken away by the complexity and interdependence of the society we have created. Less clearly--but equally certain--we have created new choices and options in profusion. Many new routes to personal fulfillment consistent with societal advancement can be uncovered in our new world.

6. We can find new methods by use of which we can agree about aspirations, constraints, and priorities.

Under historic societal circumstances of essential continuity, a system of governance based on a small, elite leadership given vague general mandates at infrequent intervals made sense. In our present and forseeable world, that system does not make sense. Now we must--and can--decentralize and de-permanentize--every decision-making process, at least in their implementation aspects. The technology and the basic concepts required to achieve this reform already exist. What we must do next--and can--is rearrange societal incentives so that today's elite few--from President to Boy Scout Troop leader--understand and accept a fundamentally different decision-making process.

7. We can find new methods by use of which we determine the distribution of wealth and the allocation of resources.

Inheritance, chance, geographic concentration, and domination of the weak by the strong have been historically the major means used to decide the distribution of wealth and the allocation of resources. While none of these factors seems likely to disappear from society, it does appear that societal complexity and interdependence are introducing new factors. If the work of production is substantially capitalized and automated, some factor other than employment must be found to provide personal income. If the technological society is more and more subject to disruption and harrassment by the alienated and disadvantaged, society must give their claims earlier and more careful attention. As the loci of power and authority shift, we must--and can--exploit the transition to contain and hopefully even to redirect constructively the rising tide of unrest among the "have-nots" across town and across the globe.

8. We can begin building a workable global community.

The decline--not the disappearance--of the nation-state as the primary world instrument for security and insecurity is starkly foreshadowed all about us today. Large multi-national firms live in a world of their own, one in which national claims often are irrelevant or not enforceable. Environmental problems ignore national borders. Communication satellites are making many national practices absurd. The existing nuclear stalemate can become the basis of true disarmament if and only if the prerogatives of national sovereignty can be redefined. A truly worldwide monetary system--perhaps even a worldwide economy--now seems only a few years distant. Practical forces arguing for global community have reached an unprecedented level and continue to strengthen rapidly. Ours is the opportunity to make constructive use of these new forces.

9. We can recapture a sense of influencing our own destiny.

In many ways, our human lot since 1900 has resembled that of a drunken sailor struggling desperately to retain his footing on a ship driven through a raging gale. In the United States, the comfortable images of the farm, the small town, and the neighborhood have been displaced by the images of Suburbia, the urban jungle, and Man on the Moon. We have endured simultaneous discontinuities in technology, politics, economics, culture, religion, and lifestyles. Small wonder that we often see ourselves today as meaningless bits of flotsam and jetsam swirled who-knows-where by who-knows-what. Yet if we can but exploit our many real opportunities--such as those mentioned here--we can aspire to replace our sense of total impotence with a sense of some influence over what happens to us.

10. We can recapture a sense of hope for the future.

Cynicism, fear, and pessimism always have cheap, safe routes to attention and esteem, at least the days of Chicken Little and Cassandra. The prophet is honored if he preaches doom and events prove him correct. If he preaches doom but the sky remains in place, he is forgotten or forgiven amid the general sense of relief. Sir Thomas More coined the term Utopia in 1516 as the title for a book describing his imaginary perfect society. In our own era the term Dystopia has been coined because most of *our* imaginary societies describe worlds in which the worst has already happened, the worlds of *1984* and *Brave New World*.

Most contemporary prophets and seers, like Jeremiah of old, discern nothing but misery and disaster ahead--and of course they may be correct. On the other hand, we must beware of the principle of self-fulfilling prophecies. Whatever the actual future proves to be, it must be realized at least in part from among the many alternative futures we can imagine, hope for, and strive to attain. If we cannot even imagine a future worth having, chances are we cannot have one. On the other hand, we can imagine futures worth having if we can identify and work together to exploit some of the many rich opportunities which in our era lay at humanity's every hand.

The Societal Climate And FSR

There is no general agreement as to the nature, scope, and utility of Futures Studies and Research. There is not even general agreement on what the field--if it is a field--should be called: Futuristics, futurology, prognostics, and mellonology are among other names proposed.

Nonetheless, FSR seems to exhibit certain distinctive features, aspects, or characteristics which make it less like such older, better established disciplines as economics or psychology and more like the newer disciplines or fields, such as general systems theory, systems analysis and design, and cybernetics. While not provable, it is at least plausible to believe that FSR's distinctive features are at least in some measure attributable to that same societal climate which in part probably is responsible for the appearance of FSR in the first place.

Among the features which strike us as distinctively characteristic of FSR are:

1. FSR is deductive.
2. FSR is topical.
3. FSR is transdisciplinary.
4. FSR exploits uncertainty.
5. FSR emphasizes interdependency and interaction.
6. FSR emphasizes dynamic processes.
7. FSR aspires to be valid and valued within all disciplines, professions, and issue sectors.

Each of these characteristic features of FSR is briefly discussed in the following paragraphs with the hope that the discussion will stimulate challenge, discussion and debate among FSR practitioners.

1. FSR is deductive.

"The future" is never immediately accessible to direct observation. We therefore must always make assumptions which structure our investigations. These assumptions we combine with our recollections of the past and our observations of the present to reach detailed conjectural conclusions about possible futures. Such a procedure inevitably proceeds from the general to the particular and so is intrinsically deductive. In our view, this feature of FSR is pertinent to Dilemma 3. in the earlier discussion.

2. FSR is topical.

As an intellectual endeavor, FSR is new, amorphous and broadly encompassing in its aspirations. Given this, FSR's topical approach was probably inevitable,at least until a more mature phase of development is reached. The topical approach--select an issue and probe it by whatever means seem fruitful--provides the structure, scope delimitation, and perspective which non-existing FSR theory cannot provide. The "topic", of course, may be as narrow and short-run as "the sale of widgets next week in Territory A," or as broad and long-run as "the future of Man." In its topical emphasis or point of departure, FSR reflects several of the Dilemmas mentioned earlier, and especially Dilemmas 1,2, and 3.

3. FSR is transdisciplinary.

In intellectual enterprise as in neighborhoods, the "newcomer" often may be the eagerest borrower. FSR leans heavily on many other fields, including modelling, simulation, gaming, opinion research, time-series analysis, and others--often thereby contributing to advancement in those fields, as in the cases of the Delphi polling method or the cross-impact matrix analysis method. FSR is transdisciplinary by necessity, a circumstance which the present authors regard as a great virtue. In our view, this feature of FSR links it directly with Dilemmas 1,2,3,and 4 and Opportunities 2 and 3, all as discussed earlier in this essay.

4. FSR exploits uncertainty.

Any possible event which lies in the future has by definition not yet actually occurred and so is by nature more or less uncertain of being actualized. FSR makes an asset out of this intrinsic uncertainty by invoking the concept of alternative futures. A great many more things possibly could happen than actually will occur. In seeking to probe the range of possibilities rather than searching linearly for the future, we are enabled and encouraged to look in many directions at once. This systematic attempt to discover which roads may lead to which Romes often presents us with foreshadowings of many important problems and possibilities which otherwise might well have escaped our attention--thereby escaping our efforts to avoid or attain them. In our view, this feature of FSR links it with Dilemmas 1,2, 3,6,and 8 and with Opportunities 2 through 10--all as discussed earlier in this essay.

5. FSR emphasizes interdependency and interaction.

In any FSR investigation, one must early identify which are the most important present and possible future factors pertinent to the FSR topic at hand. Broadly speaking, the subsequent investigation itself can be viewed as an effort to discern how all these factors might interact in various permutations to yield various, significantly different alternative futures. Such "contingency analysis" is inherent in FSR. In our view, this feature links FSR in divers ways with all ten Dilemmas and with all ten Opportunities discussed earlier.

6. FSR emphasizes dynamic processes.

Concern about the future has grown rapidly as the future has become ever more evanescent and transitory. The U.S. space program is only one prominent experience among many which have instructed us that a present intent suitably sustained may deliver a distant future according to our designs. FSR is one among several new transdisciplines dedicated to bridging the gap between the "here and now" and the "there and then." FSR examines the trends, developments, and events which could carry us from some present state of affairs to some range of conjectural future states of affairs. FSR is thereby dedicated to the study of dynamic change processes in all dimensions. In our view, this feature links FSR with Dilemmas 2,5, and 6 and with all ten Opportunities as discussed earlier in this essay.

7. FSR aspires to be valid and valued within all disciplines, professions, and issue sectors.

Most of the older, more traditional disciplines stake out rather definite boundaries for their concern. Thus a doctoral candidate in physics would not normally submit a dissertation on aesthetics, nor would an economics professor usually be caught reading (or publishing in) an anthropological journal. There have been sound reasons for this division of labor. FSR, however--and whatever it may be--is incurably topical and eclectic. Any and every discipline, profession, or issue sector has a futures dimension, and FSR goes eagerly wherever it may be invited or can evoke interest. It seems likely that FSR's eclecticism will hinder or even prevent the development of a distinctive, highly insulated body of specialized FSR theory and practice. Any possible loss attributable to this situation will in our view be more than offset if in time FSR proves to be one among several new transdisciplines through which economists and political scientists can converse with sociologists and planners. In our view, this feature of FSR links it with all ten Dilemmas and all ten Opportunities as discussed earlier in this essay.

Conclusion

We have in this prefatory essay identified ten fundamental human dilemmas and ten fundamental human opportunities in our era. We also have identified seven distinctive and characteristic features of FSR, features which make it resemble older, more traditional disciplines much less than FSR resembles what we have called here the newer "transdisciplines," as exemplified by general systems theory, systems analysis and design, and cybernetics. And we have suggested that the characteristic features of FSR may at least in part be attributable to the societal climate in which FSR is developing, as suggested by the ten Dilemmas and ten Opportunities mentioned.

The observations offered in this Preface may or may not be "true" or "provable." Our remarks have been made not for the purpose of proving a case, but rather in order to suggest the perspective within which the FSR curriculum reported here was evolved. It is our further hope that our conjectures may contribute constructively to the ongoing dialog about the nature, scope, and utility of FSR.

Whether or not and, if so, to what extent the perspective suggested here has in fact guided the development of this FSR curriculum must be left to the reader to judge. Acknowledging from the outset that FSR is in its infancy, the curriculum has been designed in an open-ended, modular format. It is not intended or recommended that any reader try to use the entire curriculum exactly as it is presented. Rather it is hoped that the curriculum will be regarded as a browsing file, one among many sources from among which to choose points of departure in FSR.

Our modular format also facilitates easy deletions, additions, revisions, and substitutions within the overall curriculum as FSR matures. We believe that the best alternative future for this curriculum would be marked by a year or two years of varied, intensive experimentation followed by drastic revision. In this case, early obsolescence not only has been planned for, it is fervently to be desired...To future futures curricula, hail!

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LIST OF ABBREVIATIONS AND SYMBOLS

ADVENT : Informal project code name for the entire curriculum development project, and for the resulting curriculum as presented in *Appendix A* and *Appendix B* of this report. Project name was suggested by Rita Moss Hunt as meaning: Futures: that which will be.

FSR : An abbreviation used experimentally in the Preface only. Stands for "Futures Studies and Research." The futures field has no generally accepted designation. Elsewhere in the report, the field is always referred to as "futures studies."

LM : Learning Module, one of the 15 autonomous or free-standing curricular units into which our curriculum is organized.

INTRODUCTION

What is the content of "education"? Speaking temporally, educational content may be sub-divided into three broad categories: all that has been or might have been, all that is, and all that may yet be. Yet, most education has focused on the first two categories because it has not been in a position to deal with the third.

There can be no lonelier group of people in the field of higher (or earlier) education than those who are interested in teaching about the future as an organized component of the instructional program. Out of more than 2,500 colleges and universities in the United States, fewer than 300 have courses devoted to the study of the future as a specific curriculum. And in fact many courses listed as "futures studies" appear in actuality to be studies of the past with a linear extrapolation into the future. What was is what will be...if only the computer has been programmed accurately.

Many courses of instruction at all levels consider selected aspects of the future, such as future job opportunities in vocational education, projected economic trends in business courses, etc. But the record shows little to suggest that the future as such is studied seriously in many colleges, universities, or in public and private schools at other levels.

The co-directors of this project sought to develop a basic curriculum in futures studies which potentially could accommodate the cross-walks among disciplines. We planned and organized a learning approach which deliberately is not tied to any one specific discipline. We have sought to devise concepts and tools which a neophyte futurist might use in progressing from a narrow but comfortable linear view of the future to a broader but more unsettling non-linear view of alternative futures.

Some instructors and students find it most distressing to acknowledge the possibility of alternative futures. For them, such an acknowledgment signifies a direct, fundamental threat to such basic concepts as the principles of "cause and effect," "before and after," "action and reaction," and "if x, then y." Conceptions of time in the context of alternative futures seem particularly difficult and painful to grasp.

The perspective and design of this futures studies curriculum are addressed to the eventual evolution of an inter- or trans-disciplinary yardstick which can be used within any more specialized discipline to probe the alternative futures of any topic or issue of interest. The Standard Study Procedure and the set of Core Concepts are meant to be helpful, flexible points of departure around which instructors and students can devise their own approaches to futures studies.

Greatly improved futures studies curricular "yardsticks" must and surely will be developed in the near future, some of them perhaps by those who profit from discovering errors in this one. We sincerely hope that the day will speedily arrive when our own efforts will be regarded as a humble first groping, long since outmoded. Until then, we trust that our yardstick will be a guide and support for the instructor who wishes to move beyond the past and present to facilitate students' learning something about the future in which perforce they must spend the rest of their lives.

-I-

FUTURES STUDIES INSTRUCTION: A FIRST SITUATION ESTIMATE

The authors of this report corresponded with many colleagues in American colleges and universities who are actively interested or engaged in planning or offering instructional programs about the future. (A list of persons contacted is given in Appendix C.) Relative to the mainstream of American higher education, futures studies instruction as of 1972 is expanding rapidly, yet remains a lonely field with no more than ten to twenty percent of all institutions represented.

Two of the most dedicated futurist faculty members and researchers are Dr. Billy Rojas and Dr. H. Wentworth Eldredge. (Formerly associated with the University of Massachusetts School of Education Program for the Study of the Future in Education, Professor Rojas is now a member of the faculty at Alice Lloyd College, Pippa Passes, Kentucky, where he is developing a futures studies program focused on the future of Appalachia. Professor Eldredge is a member of the Sociology Department faculty at Dartmouth College, Hanover, New Hampshire where he maintains a careful ongoing surveillance of trends and developments in futures studies instruction in colleges and universities throughout North America.)

Eldredge/1/ and Rojas and Eldredge/2/ published the first comprehensive critical surveys of instruction in the field on which we drew heavily in making our initial curriculum design decisions for this project. The findings of Eldredge and Rojas were further corroborated and extended by our own correspondence and other contacts with colleagues in the field. Among our initial findings and conclusions, five seemed to us to be especially important:

1. Futures studies instructors are finding it difficult to gain acceptance for their courses sufficient to sustain an instructional program in the field within their departments and institutions.

2. Futures studies instructors consistently express an interest in the nature and meaning of Time.

3. As in the case of many of the newer emerging disciplines, there is a good deal of uncertainty and confusion about where futures studies instruction most properly should be offered within the structure of higher education. One result is a gentle yet constant tug-of-war among many disciplines with respect to the field, much like the competition for computer science curriculums, another discipline which represents all fields generally yet represents none specifically.

4. Many futures courses--perhaps most--place a major emphasis on the historic perspective. Core topics often treat techniques, methodologies, classic books, and particular research projects about the future drawn from both the ancient and the recent past. Course literature regularly emphasizes forecasting methodologies, philosophies of history, of society, and of art; current issues; and studies of government. A number of courses deal specifically with the technical topic of social indicators. Many other courses deal generally with the rise and contemporary preeminence of technology.

5. There is an intense, widespread interest in establishing new interdisciplinary theoretical foundations for futures studies, a desire to expand intellectual horizons in the field. Many correspondents explicitly directed our attention to basic shifts in philosophic perspective which are inherent in serious studies of the future as contrasted with studies of the past or the present.

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EVOLUTION OF THE PROJECT: FIRST PHASE

In retrospect, the insights set forth in the Preface and Introduction seem obvious. They were not nearly so obvious, however, when the project began in February, 1971. The futures studies curriculum design has evolved through three definite phases to date. The present stage of development as submitted in Appendix A is rather different from our initial conception. We believe it will be useful here to record the sequence of the project as it developed, beginning in this section with the project as initially proposed.

In December, 1970, we developed a proposal for a graduate-level futures studies curriculum design with the assistance and approval of the Cybernetic Systems Program and the Instructional Technology Department, School of Education, California State University, San Jose. The proposal was submitted to the United States Office of Education through its Regional Research Program (Region IX, San Francisco, Dr. Walter Hirsch, Director). The proposal was accepted and the project was officially begun in February, 1971. In the remainder of this section of the report, we cite extensively from the proposal as approved so that the reader may know where we began.

Statement of the Problem

"In the three short decades between now and the twenty-first century," writes Alvin Toffler in the opening sentences of the current non-fiction best seller Future Shock/3/, "millions of ordinary, psychologically normal people will face an abrupt collision with the future. Citizens of the world's richest and most technologically advanced nations, many of them will find it increasingly painful to keep up with the incessant demand for change that characterizes our time. For them, the future will have arrived too soon. This book is about change and how we adapt to it."

This proposal, too, is about the future, about change, and how we can more competently prepare college and university students to cope with and help society control what Peter Drucker has aptly labelled the "Age of Discontinuity."/4/.

Four major premises are made in proposing the present curriculum development effort. They are:

1. During the 1960s, American society recognized and responded substantially to an urgent need to explore future problems and possibilities more thoroughly and systematically on a regular basis.

2. As a part of this broad social response, a new field of intellectual activity arose and developed rapidly. Known by various names, the new field is referred to in this proposal as the field of Futures Studies. (Note: Among established disciplines, futures studies is most nearly akin to planning, and especially to long-range planning. Futures studies, however, is concerned with the broader societal, economic, and other trends and developments over the longer range, in the context of which planners and student planners must pursue their professional activities and training.

3. Because futures studies is a new and complex field--and by its nature most comprehensive as well--the new field as yet has not been widely or adequately introduced to college and university students. Further, until now education has properly been most concerned with the past and present, much more than with the intellectual possibilities of dealing rationally with future problems and possibilities.

4. Society's increasing requirement for systematic study of the future--combined with the emergence of futures studies as a field of thought--requires that educational institutions begin developing suitable curricula in futures studies. It is proposed here to institute futures studies initially at the graduate level. The premise is that adequate exposure to futures studies will better equip pre-professional students in planning, the social and behavioral sciences, and the arts and humanities. (Later, it is anticipated that the initial effort can and should be expanded to provide a core curriculum as a major field in its own right.) In addition to relevant pre-professional experience, the futures studies survey course proposed will aid students generally to be aware of, and appreciative about, the emerging significance, contribution, and severe limits of futures studies as a new tool in the democratic process.

A brief statement in support of these premises is presented in the remainder of this section.

A major benchmark in the origin of recent societal concern about the future was the appointment in 1960 by Dwight D. Eisenhower of the President's Commission on National Goals/5/. Among other consequences, the Commission's report led to the establishment of the Center for Priority Analysis by the National Planning Association. The Center's first task was analysis of the cost of achieving goals identified by the Presidential Commission/6/. Federal interest in systematic analysis of national goals and priorities has been sustained and enlarged ever since. The National Commission on Technology, Automation, and Economic Progress published an important report in 1966/7/. More recently,an intensive re-study of national goals was made by the White House National Goals staff and published on July 4,1970/8/.

Much of the interest and many of the methods applied by civil sector federal forecasters arose out of the emphasis on long-range forecasting by the Department of Defense, especially in the 1960s. A succinct description of DOD and military service activities in technology forecasting has been given by Jantsch/9/.As Jantsch notes, the DOD approach--especially as directed by Secretary McNamara--led to the development of the PPBS (Program Planning and Budgeting System) approach which is now being widely adopted at all levels of government and which, in turn, has stimulated efforts to develop future-oriented "social indicators"/10/.

Other levels of government have also been asessing the future more extensively. Beginning with the Goals for Dallas program in the mid-1960s/11/, nearly 100 ongoing goals and priorities programs have been and/or are being sponsored by cities, states and regions, according to a survey by the International City Managers' Association/12/.

Business and independent institutions are also increasingly active in futures studies. Perhaps the most widely known private facility is the TEMPO center established in Santa Barbara, California by General Electric Company. General Electric also maintains a significant futures studies Business Environment Group in New York/13/.

Typical independent institutions engaged in substantial futures studies programs include: American Academy of Arts and Sciences Commission on the Year 2000/14/; National Planning Association Center for Priority Analysis (op. cit./6/); Foreign Policy Association/15/; American Institute of Architects/16/; and the American Institute of Planners/17/.

Education also has turned to futures studies as an aid to long-range planning. As early as 1966, one author of this proposal consulted at a summer teacher workshop concerning technology and education in the Twenty-First Century/18/. On a larger scale, another multi-year futures studies program laid the groundwork for planning the future of education in eight western states /19/. More recently, a series of nine-month pilot studies about education's future was sponsored by the U.S. Office of Education, which then permanently funded two educational futures studies centers--the Educational Policy Research Centers at Stanford Research Institute and at Syracuse University.

The RAND Corporation in Santa Monica, California has conducted or stimulated a number of important futures studies, including the development by Helmer and Gordon of the well-known Delphi forecasting method/20/. Helmer is co-founder and research director of the Institute for the Future, organized in 1967 in association with the National Industrial Conference Board. Another RAND alumni, Dr. Herman Kahn, is co-author of a major study about the future/21/, and is founder and director of the Hudson Institute in New York State, a futures studies center.

The World Future Society was organized in 1966 as the first organization for professional futurists and persons seriously interested in the field. The Society now has several thousand members throughout the world and its journal, The Futurist/22/, is the most widely known voice in the field.

As one summary indicator of the field's extent, a recent professional bibliography by a futures studies center at the University of Massachusetts/23/ contains about 1500 entries and identifies 54 futures studies centers in nine countries.

Taken together, these facts support the premise that our society feels a growing need and interest in studying the future seriously, and the premise that a new field--futures studies--has developed rapidly in response to this need.

Because futures studies is a new field as well as a complex and rapidly changing one, formal education and training in the field has lagged. Most practicing futurists were educated and are experienced in more traditional disciplines. Given the all-inclusive scope of "the future," such diversity is healthy and seems certain to persist.

(As an important aside, futurists play an increasingly important role in relating the efforts of professional planners and planning organizations to groups and organizations requiring planning services. This is particularly true in the long-range planning field, as exemplified best by the Stanford Research Institute's Long-Range Planning Service.)

However, futures studies is developing its own central core of concepts, methods, techniques, and approaches to the future. Accordingly, there is a fundamental requirement to organize and convey in an orderly fashion the rapidly developing body of skills and knowledge within the field. Students pursuing graduate degrees in planning, the social and behavioral sciences, and in the arts and humanities will live and work in a society where futurist disciplines are increasingly needed and valued. In consequence, graduate students in these fields should have some familiarity with futures studies as it applies to their own professions and to the society at large.

Indeed, students have shown a great deal of interest in studies of the future. An informal survey published in The Futurist in April, 1969/24/ found that fifteen experimental futures studies courses where then being offered at the college level in the United States, Canada, and Germany. A more systematic survey completed in December, 1969 by Professor H. Wentworth Eldredge, Dartmouth College, identified 75 futures studies courses at the college level in the United States; Professor Eldredge expressed the conviction to one author of this proposal/25/ that many other courses in the field had not yet been identified by his survey.

An inspection of futures studies courses as described (op. cit.,/1,2/)suggests necessary directions for further curriculum development in the field. Required is a learning experience which:

1. Transcends the perspective of any one traditional discipline,issue,or topic of special interest.

2. Relates futures studies to other fields and disciplines--especially planning, the social and behavioral sciences, and the arts and humanities.

3. Places modern futurist thought in the solid context of ancient, traditional, and/or non-rational futuristic perceptions.

4. Provides rich opportunities for the student to explore and apply experimentally a number of varied modern futurist methods and techniques.

5. Provides a rational foundation for orderly extension of further learning experiences in futures studies.

Such are the important insights which futures studies curricular development to date has yielded. These strategic considerations, in turn, underlie the specific development effort proposed here.

Purposes and objectives of the course

To summarize, the primary purposes of the proposed survey course are:

1. To provide a solid introduction to futures studies at the graduate level for students of planning, the behavioral and social sciences, and the arts and humanities.

2. To identify and resolve practical problems encountered in introducing a new field to students and in relating the field to other disciplines.

3. To equip and motivate students to pursue productively studies of the future within their own major fields, further developing their command of futurist methods and their critical appreciation of futures studies.

4. To identify immediate needs for additional curriculum development in futures studies.

In accord with the basic purposes of the course as stated above, the primary course objective is to facilitate acquisition of knowledge and appreciation concerning historic development and importance of human thought about the future; and to stimulate in students the ability to imagine and consider the implications of many alternative possible futures for society. Within this primary objective, specific course objectives are:

1. To make clear the basic relation between recent accelerating social change and the emergence of futures studies as a field of thought.
2. To relate traditional and non-rational futurist thought (mysticism, superstition, religion,etc.) to current efforts to probe future possibilities analytically.
3. To give students self-confidence in using and criticizing the use of basic futurist methods and techniques.
4. To help students inventory current futuristic attitudes, knowledge, and analytic skills within their own major fields of study.
5. To equip and motivate students to share their futures studies knowledge and insights widely, with others in their own fields and with the community at large.

Further to clarify the effort proposed, these specific course objectives are re-stated below in terms of actual student behavioral performance objectives.

Student behavioral performance objectives

Satisfactory completion of the futures studies survey course requires that the student shall be able to:

1. Submit an acceptable multi-media presentation, replicable demonstration, or written account of perspectives, methods, and techniques used by futurists.
2. Submit an acceptable multi-media presentation, replicable demonstration or written account of the application of forecasting methods and techniques in the profession or discipline for which the student is preparing himself.

3. Make a simple application of one or more futurist methods/techniques in two of the three following areas, and submit a brief report of his effort, preferably in multi-media format:

    a. A major current issue within the student's intended profession or field.

    b. A major current social issue.

    c. A critical dimension of the student's own personal life planning.

4. Prepare and/or present previously prepared materials describing for a specified professional or general audience the development of futures studies since 1960. The materials prepared and/or used in making the presentation should:

    a. treat issues related to accelerating change.

    b. identify and describe the most widely known futurist activities.

    c. relate futures studies to the presumed interests and needs of the specific audience for which the presentation was prepared.

5. Submit a brief written description of a reccommended multi-media package presenting the basic concepts of "time," "change," "measurement of change," and "the future."

6. Submit and be prepared to defend a formal definition of Progress--either within his chosen profession or field, or for society as a whole.

7. Submit acceptable evidence that he has read, viewed, or listened to at least five significant futurist works from a list provided him, including films, plays, telecasts, poems, and books.

General methodology

The principal effort of the proposed project is to evaluate critically existing futures studies materials in light of stated objectives, and to design,develop, and test suitable prototype learning materials and experiences to achieve the stated objectives.

Most of the materials to be evaluated are already possessed by the co-investigators and/or are readily accessible to them through the resources of an existing Advisory Task Force.

One co-investigator (Miller) has been active in futures studies since 1965. He submitted an invited paper/26/, subsequently published, to the Inaugural Conference on Future Research (Oslo, 1966) and was invited to attend the Second Conference (Kyoto, 1970). He is a charter member of the World Future Society and is a general editor of the Society's official publication, The Futurist.During 1967 as principal consultant to the American Institute of Architects, he assisted in the conceptualization and organization of one of the first efforts by a major profession in modern times to make a systematic study of the profession's future/27/. Having been active in futures studies since its inception, he is well acquainted with principal futurists throughout the world and has systematically acquired the significant literature as it appeared.

The other co-investigator (Hunt) has had a career in industry, as a foundation executive, as a college faculty member, and as an educational consultant in higher education, specializing in media and instructional technology. Especially relevant to the effort here proposed was his service as Executive Director of the California State Committee on Public Education during 1967 and 1968. SCOPE in an ambitious statewide effort identified future needs and objectives of public education in California/28/.

The co-investigators' resources will be substantially augmented by the resources of an Advisory Task Force (see Appendix D for membership list). Organizations represented on the Advisory Task Force include:

Cybernetic Systems Program, California State University, San Jose

Extension Media Center, University of California

Educational Policy Research Center, Stanford Research Institute

Futures studies program, Department of Communications, College of Marin, Kentfield, Calif.

Instructional Technology Department, School of Education, California State University, San Jose

Pacific House, Palo Alto, California

Western Behavioral Sciences Institute, La Jolla, California

World Future Society (President, *ex officio*)

The Learning Module approach

The development effort here proposed is to our knowledge the first attempt to design a curriculum which surveys the ill-defined field of futures studies. As such an exploratory effort, the project must confront and resolve several fundamental issues:

What *is* the proper scope of futures studies?

How are the component sectors of the field inter-related?

How does the field relate with others?

Which aspects of futures studies should be given most emphasis in a survey course?

These and a range of related issues--some perhaps not identifiable in advance--present some of the most challenging tasks to be accomplished by the project.

In such circumstances, we propose to take a "Learning Module" approach in developing the curriculum. That is, we propose to identify a series of basic concepts and/or broad topics and to design an autonomous or free-standing mini-curriculum for each one, such that any Learning Module may be used with any other or all Modules in any sequence desired, within a flexible framework which ties them together. In this way, individual Learning Modules (LMs)can be revised, extended, replaced or combined according to ongoing experience, the preferences of individual instructors and the requirements of particular curricula.

Simply to identify and outline the learning modules is to propose a structure for the discipline, a structure which properly must be held open to challenge, discussion, and debate. Thus, the initial Learning Modules will serve as an experimental core which can encourage further futures studies curricular development, an important meta-objective of the effort proposed here.

Packaging the Learning Modules: a concept

While the present proposal has as its final objective only the identification and outline content of a series of Learning Modules, we intend to design the LMs so that they will be compatible with a subsequent, standardized package format. Our concept is that each LM ultimately should be published in the form of a series of filmstrips narrated by audio cassettes and supplemented by a Learning Guide. Our concept is based on two factors:

1. Our decision to emphasize student production of multi-media presentations in specifying student behavioral performance objectives.

2. What we believe is an urgent need to encourage rapid development of additional LM concepts and prototypes as a means of promoting the growth of futures studies curricula in all fields and at all academic levels.

We discuss these factors below.

It is a well established principle of learning that one's own knowledge and insight about a subject is strongly reinforced when one is required to convey what he knows to others. In a field as new, complex, and in some instances as irritatingly vague as futures studies, the "teach another" emphasis offers important advantages. In preparing an LM, the student must decide which facts and concepts are most important for his intended audience; he must also explore a range of alternative ways to convey the facts and concepts he selects. In performing these tasks, the student demonstrates clearly to himself and to his instructor what he has learned, facilitating diagnosis and prescription for additional learning.

A second more general advantage in having students develop new LM concepts and prototypes in multi-media formats is that the ability to prepare such presentations is increasingly required in professional life. Despite this "real world" trend, many college and university students are neither required nor encouraged to develop such skills.

If the futures studies course is itself embodied in multi-media packages and if students taking the course are required to conceive if not develop additional such packages, they will be both sensitized and given some valuable experience in the possibilities and challenges encountered when making such multi-media presentations.

Beyond the direct advantages which embodying the Learning Modules in multi-media formats would offer students, other advantages would accrue to instructors and to speedier diffusion of futures studies instruction.

Programmed instruction and computer-assisted instruction developments have long since demonstrated their contribution to improved instructor efficiency as well as to improved, learner-paced learning. Given such materials of suitable quality in futures studies, students could work through such materials individually outside of class in on-campus learning materials centers so that class sessions could be reserved for seminars, student presentations, and individual conferences--in our view the best uses of precious classroom time.

The development of free-standing, learner-directed, multi-media Learning Module packages in futures studies also should significantly accelerate the diffusion of futures studies instruction. The subject is not now widely taught, nor are there many instructors in colleges and universities who feel both qualified and confident about offering futures studies courses. Packaged multi-media Learning Modules such as those suggested here would provide a body of integrated, flexible materials which could be used easily and effectively by instructors in many disciplines who are--as futurists--novices in the field. Further, the specific package format we suggest--namely, filmstrips, audio cassettes, and simple printed Learning Guides--would afford the simplest, least expensive multimedia materials most compatible with the most prevalent instructional hardware--namely, the filmstrip projector and the audiotape recorder/player.

Scope and sequence of learning experiences

The proposed course will be designed for either two or three semester units of credit at the Master's candidate level. Students will be required to meet for two hours once each week, with the instructor available for individual meetings during a third, regularly scheduled hour each week. Students will be expected to devote a minimum of five hours weekly to independent study, to consist of working through assigned or elected Learning Modules and completing all assigned independent study projects as specified earlier (pages 11-12 preceding).

While the individual student's sequence of learning experiences will by design be flexible, a typical sequence might be:

1. Initial class meeting. Course purposes and objectives, student behavioral performance objectives presented and discussed. Each student required to select one initial Learning Module to explore, or instructor may assign Learning Modules.

2. Individual students work independently through Learning Modules. A student may choose to work through all LMs before beginning assigned projects or he may elect to complete one LM including assigned projects before proceeding to the next. A variety of patterns will be encouraged.

3. Weekly class meetings. It is anticipated that

the first few meetings will be devoted to helping students understand more thoroughly the purposes and objectives of the experience, and to discussions of knowledge and concepts gained through independent study. Mid-semester class meetings probably will concentrate on the conceptual and detailed problems incident to student projects. At his discretion, the instructor will reserve the right to conduct seminars on selected topics. Final class meetings probably will be given over to presentations and reports on completed student projects. At least one final session will be devoted to an intensive evaluation by the students of their experiences in the course.

4. Assigned projects represent a critical component of the learning experience. As discussed earlier, project assignments will emphasize preparation of multimedia presentation packages. Some students will already possess requisite media skills, while others will require remedial instruction. Whenever possible, media technicians will be assigned to the course, freeing students to concentrate on concepts but also giving them realistic experience in working with media technicians, a situation they will regularly encounter in their professional careers. Students will be encouraged to develop assigned projects within their own major fields, or on the basis of strong personal interests or special funds of knowledge. Joint projects by two or more students will be encouraged, but teams will be required to describe and defend the roles of each team member.

Description of content

The scope of futures studies is ill-defined but vast. Deciding on exact topics to be covered in a survey course is, therefore, one of the major tasks in the effort proposed. In this section, we merely suggest typical topics which might be treated in each of the six Learning Modules into which we tentatively have organized the course.

Learning Module 1: Origins and development of futurist thought to recent times (1960).

Some typical topics:

1. *Yesterday's Tomorrows* (University of Toronto Press, 1968).
2. Divination in the ancient world.
3. Nostradamus and his prophecies.
4. Poetic visions of the future.
5. The Greek oracles.
6. Milleniarianism in Christendom.
7. *Utopia*, by Sir Thomas More.
8. *New Maps of Hell: A Survey of Science Fiction*, Kingsley Amis, 1960.
9. American Utopian experiments, past and present.

Learning Module 2: Origins and development of futures studies since 1960.

Some typical topics:

1. The President's Commission On National Goals(1960).
2. Goals For Dallas, and its successors.
3. The Mankind 2000 Project.
4. *The Art Of Conjecture* by Bertrand de Jouvenel.
5. Rise of the World Future Society.
6. The Institute for the Future.
7. *Toward The Year 2000*, by Herman Kahn and Anthony Weiner.
8. The Stanford Research Institute Long-Range Planning Service.
9. The Oslo (1967) and Kyoto (1970) world conferences on the future.

Learning Module 3: Futurist methods/techniques in established professions/disciplines.

Some typical topics:

1. Population forecasting: U.S. Census Bureau, United Nations.
2. Economic forecasting: The Wharton Model, Economic Associates, etc.
3. The A.I.A. study: a profession examines its future.

Learning Module 4: Basic concepts, methods, and techniques of modern futures studies.

Some typical topics:

1. Technology forecasting: Lenz, Martino, Prehoda, Ayres, Bright, etc.
2. Scenario approaches.
3. Trend projection methods.
4. Toward The Year 2000, by Herman Kahn and Anthony Weiner.
5. Modeling and simulation methods: Abt Associates, RAND Corporation, Peter House, etc.
6. Gaming methods: The World Game, CITY, National Gaming Council, etc.
7. The cross-impact matrix approach (Gordon).
8. Forecasting social values: Finley, Wentworth.
9. The Delphi Method (Helmer, others).

Learning Module 5: The concepts of "time," "change," "measurement of change," and "future."

Some typical topics:

1. Time Is... (film)
2. Time in relativity theory.
3. Biological time.
4. The concept of "real" time.
5. The relation of time, change, and causality.
6. Technological change.
7. Cyclic change.
8. Future Shock, by Alvin Toffler.
9. Ideas of fate and predestination.

Learning Module 6: The idea of Progress.

Some typical topics:

1. History of the idea (J.B. Bury's book).
2. The Economics Of Abundance, by Robert Theobald.
3. The Social Accounting Act (Senator Walter Mondale).
4. The Technology Assessment Act (Rep. Emilio Daddario).
5. The Age Of Discontinuity, by Peter Drucker.
6. The Next Generation, by Donald N. Michael.
7. The Making Of A Counter Culture, by Theodore Roszak.
8. The Future As History, by Robert Heilbroner.

Evaluation of the project

The project presented in this proposal is organized into two distinct segments:

1. The effort intended for completion under the terms of this proposal is limited to completing a set of detailed specifications for a series of Learning Modules.

2. The actual development of the Learning Modules and their use in an experimental offering of the futures studies course. Given satisfactory completion of the first segment, the authors propose subsequently to develop and produce the actual Learning Modules proper, but this LM production and development task is not incorporated in the present proposal.

When the second-named effort has been completed, two sets of objective evaluation criteria can be used:

1. Criteria based on student achievement of specified behavioral performance objectives.
2. Criteria based on adoption of the course in a variety of graduate programs in planning, the social and behavioral sciences, and the arts and humanities.

Since neither the production of prototype LMs nor their use in an experimental course is proposed here, such objective evaluation criteria cannot be specified for the present project. Rather, the proposed project will be evaluated in terms of delivery of specified products, namely:

1. Detailed specification of course objectives.
2. Detailed specifications for a set of Learning Modules which can reasonably be expected to satisfy these objectives.

Given the broad scope, diffusive structure, and early state of development of futures studies, project evaluation must necessarily be based based on the judgement of experienced observers representing the field, related academic disciplines, and instructional technology specialists. It is for these reasons that the Advisory Working Group (see Appendix D for membership) has been organized.

Summary Comment On The First Phase Of The Project

This section of this final report has presented the futures studies curriculum development project as originally conceived, proposed, and approved.

The requirement for the project was based on a documented increasing U.S. interest in conjecturing about and planning for the long-range future, and the consequent emergence of futures studies as one new field addressing itself to this societal concern.

Because futures studies is a new, ill-structured, broadly encompassing field--it was asserted--futures studies instruction in higher education has lagged, even though the need for such instruction is increasingly apparent and even though symptoms of keen student and faculty interest in the field are visible.

Accordingly, we proposed to develop a futures studies curriculum which would provide a solid introduction to the field at the graduate level for students in planning, the behavioral and social sciences, and the arts and humanities. In so doing, we hoped to identify and resolve some of the practical problems which always attend the introduction of a new field of study. We hoped also to equip and motivate students to pursue more ambitious studies of the future subsequently, and to identify immediate needs for further curriculum development in the field.

We proposed specifically to design a course organized into a set of autonomous Learning Modules which could be combined in many different ways according to the instructor's interests, the requirements of other disciplines or topics incorporated, or student needs. We proposed to make the Learning Module designs compatible with simple, standardized multi-media formats consisting of sound filmstrips with accompanying Learning Guides. And we proposed to emphasize student preparation and presentation of additional multi-media materials as a means of diffusing futures studies instruction while giving students badly needed but often undeveloped skills in preparing and using multi-media materials. We proposed a tentative list of six Learning Modules:

LM-1: Origins and development of futurist thought to recent times (1960).

LM-2: Origins and development of futures studies since 1960.

LM-3: Futurist methods/techniques in established professions/disciplines.

LM-4: Basic concepts, methods, and techniques of modern futures studies.

LM-5: The concepts of "time," "change," "measurement of change," and "future."

LM-6: The idea of Progress.

To repeat, such was our conception of the project in its first phase. Indeed, most of the material in this section of the report is taken literally or in summary paraphrased form from our proposal as approved.

As we compare our initial conception of the project with its current status as presented in Appendix A and Appendix B of this report, it is our view that the original intent has been realized. Realization of our intent, however, has taken a rather different form than we anticipated as the project began.

Initially, we conceived of the course as a more or less conventional survey course, dealing briefly with the usual questions: Where did the field have its origins? What was its early history? What have been the recent developments in the field? What is its status in society today? What are some of the basic ideas and achievements in the field? Such are the questions implied by the six Learning Modules originally proposed as listed above.

As the project evolved, however, it was seen that the typical survey approach was unsatisfactory. The field was too broad, too ill-structured, and too diffused to make any adequate survey more than cursory. Even more important, we realized that the most urgent need is for simple, generalized concepts and methods which can be used as a common language or "yardstick" within any discipline treating any topic. Initial development of such conceptual tools constituted the second phase of the project, as described in the next section of this report.

-III-

EVOLUTION OF THE PROJECT: SECOND PHASE

The futures studies curriculum development project as initially conceived, proposed, and approved for support beginning in February, 1971 was described and discussed in the preceding section. This section traces the evolution of the project through its second phase of development.

As actual work began on the project, an essential first step was to survey existing instructional practice in the new field. This was done, based on the pioneering surveys by Eldredge (op. cit./1/), Rojas and Eldredge (op. cit./2), and correspondence addressed to college and university faculty known to have offered futures studies instruction, as listed in Appendix C, all as discussed on pages 3 and 4 of this report. Five major findings based on this analysis were cited earlier but bear repeating because it was actually at this point in the project that the findings in question were established:

1. Futures studies instructors are finding it difficult to gain acceptance for their courses sufficient to sustain an instructional program in the field within their departments and institutions.

2. Futures studies instructors consistently express an interest in the nature and meaning of Time.

3. As in the case of many of the newer emerging disciplines, there is a good deal of uncertainty and confusion about where futures studies instruction most properly should be offered within the structure of higher education. One result is a gentle yet constant tug-of-war among many disciplines with respect to the field, much like the competition for computer science curriculums, another discipline which represents all fields generally yet represents none specifically.

4. Many futures courses--perhaps most--place a major emphasis on the historic perspective. Core topics often treat techniques, methodologies, classic books, and particular research projects about the future drawn from both the ancient and the recent past. Course literature regularly emphasizes forecasting methodologies,philosophies of history, of society, and of art; current issues; and studies of government. A number of courses deal specifically with the technical topic of social indicators. Many other courses deal generally with the rise and contemporary preeminence of technology.

5. There is an intense, widespread interest in establishing new interdisciplinary theoretical foundations for futures studies, a desire to expand intellectual horizons in the field. Many correspondents explicitly directed our attention to basic shifts in philosophic perspective which are inherent in serious studies of the future as contrasted with studies of the past or the present.

In addition to these primary findings, three secondary findings which seemed important for the detailed design phase of the project were:

6. In futures studies courses, instructors and students alike take an extremely personalized approach to alternative futures. They usually emphasize issues relevant to their immediate personal growth, to their own special knowledge and experience, or to their most pressing personal concerns about future societies.

7. "We learn by doing," as one instructor expressed it. Conventional approaches to group instruction--assigned readings,lectures, quizzes, and exams--tend to be avoided, while participatory, self-concerned experiences are sought.

8. During at least the near future, futurist faculty of necessity must be recruited from older, established disciplines, often in the form of persons who--as futurists--are apt to be only a bit if at all in advance of their students.

Project Redesign Implications Of The Curriculum Analysis

Once having accepted the eight findings mentioned, based on our futures studies curriculum survey analysis, we reviewed their specific implications for the curriculum design as we had originally conceived it. Upon due deliberation, the following implications convinced us that a modified approach was indicated:

1. Our proposed Learning Module 1 (Origins and development of futurist thought to recent times) was not as urgently needed as we had presumed. Many instructors already were using the historical approach comfortably within the perspective of their own fields.

2. Our proposed Learning Module 6 (The idea of Progress) did not deserve as much emphasis as our initial design implied--one-sixth of the course. No matter how central or fundamental we believed this concept to be, futurist instructors on the whole seemed to regard the idea of Progress merely as one among many topics which might be dealt with.

3. The principal need in the field seemed to relate most closely to our Learning Modules 3,4,and 5 (futurist methods/techniques in established professions/disciplines; basic concepts, methods, and techniques of modern futures studies; and the concepts of "time," "change," "measurement of change," and "future." Instructors and students alike seemed to us to be in search of simple, basic, general concepts about the future which could be easily taught, readily learned, and applied to almost any topic by the student himself.

4. Closely related to Point 3. above, there seemed to be some requirement for a systematic, extensively structured study method-

ology. Instructors and students alike seemed uncertain as to how futures studies topics could be clearly delineated and probed.

5. Finally, it appeared that an abstract, generalized set of futures studies concepts and a systematic study methodology would facilitate academic acceptance of futures studies as a legitimate curriculum offering; would facilitate studies of the future in other disciplines on some common, shareable basis; and would make it possible for instructors and students within any given class to pursue their respective personal interests in futures, again on some common, shareable basis.

The Modified Curriculum Design

Accordingly, a modified curriculum design was conceived. In its earliest phase, the new design was seen as having three basic components:

1. A Standard Study Procedure, extensively structured but readily mastered which could be extended and refined by each learner in the course of probing alternative futures for any topic and purpose from the perspective of any discipline or set of assumptions.

2. A Core Concept Set--basic concepts and ideas inherent in futures studies, no matter what topic is examined for what purpose by what academic discipline.

3. A Standard Application Procedure, by means of which the learner might translate insights gained in using 1. and 2. above into statements describing relevant decision tasks or planning tasks.

Initial development of the modified design was limited to the first two components, since the third clearly must be derived from them. Subsequently, it became obvious that the objectives of the Standard Application Procedure could be readily accommodated within the Standard Study Procedure. Accordingly, the modified futures studies curriculum as it now exists consists of only two basic components, namely:

1. The Standard Study Procedure.

2. The Core Concepts Set.

A detailed presentation of these two basic components in their present state of development is given in the Curriculum Guide (Appendix A). A brief general discussion of these components is given in the two sections immediately following.

The Standard Study Procedure: General Discussion

Some simple, universally applicable conceptual framework was required for the Standard Study Procedure, a framework which could be readily mastered and used in making first learning explorations in futures studies. It was decided that a simple and appropriate framework could be based on the principle of systematic observation as practiced in the natural and behavioral sciences. The assumption is that critical aspects and relations of a topic can be identified by observation; that explicit statements of judgement as to which are critical aspects and relations clarify and organize pertinent comprehension and understanding about the topic; and, finally, that a better knowledge and understanding about a topic provide a sound basis for conjecturing about possible alternative futures pertinent to the topic. This line of reasoning is summed up in the maxim which became the basic design principle for the Standard Study Procedure:

Foresight through insight.

As expressed in the Standard Study Procedure, the systematic observation learning method incorporates three components: The Observer/Forecaster, the Pattern, and the Environment.

The role of the Observer/Forecaster is taken by the learner himself. As the Observer, the learner is required to define his study topic in terms of the Pattern (see below) and its Environment (see below). Furthere, the learner as Observer must state the nature of his interest in his topic, what he hopes to gain through study-observation, and what use he intends to make of what he learns. Discussion of the learner as Forecaster is deferred for the moment, since that role is defined in terms of the Pattern and its Environment which are therefore described next.

The Pattern as employed in the Standard Study Procedure is merely a uniform, standardized, and highly abstract and generalizable method for defining any study topic of interest. The Pattern is defined as having a name and two or more critical features, called Key Elements. To cite a familiar example, one Pattern is the Primary Nuclear Family (its Pattern Name), consisting of the Mother, the Father, the Son(s) and/or the Daughter(s) (the Pattern's Key Elements).

To repeat for emphasis, the Standard Study Procedure assumes that any and every futures studies study topic--physical object, societal issue, technological issue, economic issue, political issue, or whatever--can be defined in terms of a Pattern which has a Name and a set of Key Elements.

A second level of detail in defining or describing the study topic as a Pattern is afforded by requiring the learner as Observer to identify for each Key Element its Key Attributes and its Key Relations. To pursue the Primary Nuclear Family example, one Key Element in that Pattern is the Mother. Among the Mother's Key Attributes are her age, socioeconomic status, level of education, etc. The Mother's Key Relations in the Primary Nuclear Family Pattern would include relations with her husband, with her son(s) if any, and with her daughter(s) if any.

Summarizing for the Pattern, the Pattern in the Standard Study Procedure is defined as consisting of a Name and Key Elements. Every Key Element is defined as having Key Attributes and Key Relations. The Standard Study Procedure requires the learner as Observer to describe and make critical judgments about his study topic by naming the Pattern, naming the Key Elements, and for every Key Element naming its Key Attributes and its Key Relations.

The third and final component of the Standard Study Procedure is the Environment. "Environment" is used in its general, abstract sense and for any given study topic may refer to the physical environment, the behavioral environment, the technological environment, the economic environment, the political environment, etc. However defined, the Environment is always characterized in terms of its relation with the Pattern as perceived by the learner Observer.

As Observer, the learner must decide and state which is or are the critical Environments for his study purposes. Using the Primary Nuclear Family for illustrative purposes once again, a learner Observer who places himself in the role of a regional consumer products manufacturer might choose to limit his study to Primary Nuclear Families in the ten westernmost United States whose family incomes exceed $7000. Such a delimitation involves two Environments: a geographic environment and a socioeconomic environment. Obviously, which environments are relevant to a given observation study is determined by the purpose for the study, and it is such critical decisions that the learner as Observer is required systematically to make and to report.

As Observer, the learner must also select the time-horizon Environment. That is, he must decide how much of the past is to be taken into account in making his observation study. Is he interested in U.S. Primary Nuclear Families for this year only. Or is he perhaps interested in trends in the Primary Nuclear Family during the past decade or the past century. The time-horizon Environment obviously has a basic impact on the selection and interpretation of facts and data during the course of the observation study. Once again, the learner as Observer is obliged to render and report such decisions in light of the study purposes he has set for himself.

As Observer, the learner further must decide for each critical Environment he identifies which are the Key Environmental Resources and which are the Key Environmental Constraints. Thus the Observer is required to make and report critical judgments about the important relations between his study topic and its setting. In describing the topic as Pattern, the learner-Observer was required to specify the essential internal structure of his study topic. In relating his study topic to its Environment, the learner-Observer is obliged to examine the holistic significance of his topic in relation to "the rest of the world."

As an illustrative example of the Environmental Resources/Constraints description tasks, some Key Environmental Resources of the Primary Nuclear Family might be: sources of income, sources of health care, sources of education, and sources of recreational services. And some Key Environmental Constraints on the Primary Nuclear Family might be: domestic relations laws, mores, and customs; societal prejudcies, average lifespan, and household mobility trends. As explained in detail in Learning Module 1, Appendix A, Environmental Resources and Constraints often are difficult to distinguish and in fact may often coincide.

Summarizing for the Environment component of the Standard Study Procedure, the learner as Observer is required to identify all important Environments pertinent to his particular observation study of a Pattern. Environments are always defined in relation to the Pattern. The learner-Observer must also select the time-horizon Environment for his observation. Finally, the Observer must identify for each Environment its Key Environmental Resources and its Key Environmental Constraints, relative to the Pattern.

After and only after the learner has fulfilled his role as Observer in examining his study topic as a Pattern is he in position to assume his second role, namely his role as Forecaster. The Standard Study Procedure requires always that the learner have at hand a completed Observation Report Form for his topic before he can make a Forecast Report.

One aspect of the Forecaster role in the Standard Study Procedure must be clearly understood at the outset. The Procedure requires only that certain specific forecast estimates be made. The Procedure does not specify how forecast estimates are to be arrived at. That is, the Procedure makes no specific requirement concerning forecast methodologies. The Procedure merely requires that certain forecast estimates be made--whatever method the learner chooses to use--and reported.

As Forecaster, the learner must once again state the nature of his interest in the study topic Pattern he has observed. The learner-Forecaster must indicate what he hopes to learn from his forecast, and what use he intends to make of what he hopes to learn. The learner-Forecaster must also identify the time-horizon of his forecast--that is, he must indicate in advance how far into the future his forecast will extend. All these requirements are meant to demonstrate to the learner that attitudes and intent critically affect estimates and interpretations about possible alternative futures.

But what actual forecast estimates are required of the learner in his role as Forecaster? Speaking generally, the Forecaster is obliged to forecast, item by item, what changes if any can be expected in his study Pattern and its Environment as he has observed the Pattern presently to be. Will the Pattern endure until the most distant time-point in his forecast time-horizon? If so, which Key Elements may cease to be Key Elements, and which new Key Elements may emerge? For every Key Element, what shifts may be expected in Key Attributes and Key Relations? And what comparable shifts may be forecast in the Pattern Environment(s), its Key Resources, and its Key Constraints by the most distant time-point in the forecast time-horizon?

The Standard Study Procedure requires the learner as Forecaster to make specific, exhaustive forecast estimates on each of the points mentioned above. Further, the Procedure requires that the learner-Forecaster make rough estimates as to his level of confidence in each forecast estimate and of his forecast as a whole.

The entire Standard Study Procedure has been incorporated into two forms, the Observation Report Form and the Forecast Report Form. Both forms are reproduced at the end of Learning Module 2 in Appendix A.

In concluding this discussion of the Standard Study Procedure, we emphasize that the Procedure has been specifically designed for learning-teaching purposes for novice futurists. Thus the procedure deliberately includes an elaborate structure which students are required to follow, step-by-step and item-by-item in completing elaborate forms. At the same time, this elaborate procedure offers the student no assistance or guidance in observation or forecasting methodologies. Such is not the intent of the Procedure. The Procedure rather is intended to confront and engage the student in the processes of making the many assumptions, estimates, decisions, and critical judgments which invariably comprise all studies of possible futures. The purpose of such an engagement is to sensitize the student as to the intrinsically judgmental nature of futures studies so that he can be both more appreciative and more critical of professional forecasts and futures studies reports whenever and wherever he may encounter them.

In theory, the Standard Study Procedure might be used in making serious collaborative futures studies investigations. In practice, while the Procedure may be of some value in making first, tutorial investigations it seems much too awkward and unwieldy for general use. The Standard Study Procedure is meant by us solely to be a learning-teaching aid, and we would neither expect nor recommend its use as a serious professional futures study and research methodology.

Finally, we wish to remind the reader once again of the modular design of the curriculum. With respect to the Standard Study Procedure, modular design means simply that the Procedure may be used in conjunction with the Core Concept set discussed below but need not be. The Procedure may be used if desired without reference to the Core Concept Set, and vice versa.

The Core Concept Set: General Discussion

As we turned from the Standard Study Procedure component of the modified curriculum design to the Core Concept Set component, we found ourselves confronting at last the most difficult and yet the most exciting single task of the entire project. We had now to face the central issue of identifying and specifying concepts and ideas which in our view were seminal in futures studies, and to decide how much emphasis and what sort of treatment to give to each concept or idea.

The Standard Study Procedure design task had been approached with much greater confidence. The Procedure might or might not prove to be a useful or an acceptable pedagogic tool in futures studies instruction. Valuable or not, however, once conceived the Procedure exhibited within itself a structure, a consistency and distinct boundaries. Our task in developing the Procedure amounted essentially to realizing and explicating the essential features implied by the basic premises with which we began.

Quite a different situation presented itself as we began to develop the Core Concept Set.

There could be absolutely no doubt about the demand for and thus the potential utility and acceptance of learning materials setting forth what might be termed the Great Ideas in futures studies. Our curriculum and instructional survey analysis had documented an eager search for such central concepts and ideas in teachable form.

On the other hand, no one was certain which concepts and ideas were primary and which secondary, with certain exceptions such as the concept of "alternative futures." Even granted a candidate list of concepts on which reasonably general agreement might be secured, it was not at all clear how to segment one concept from others for instructional purposes. Neither was it clear how most clearly to demonstrate the intimate interrelations among futures studies concepts.

Inevitably, then, we endured considerable fumbling combined with inefficient but all-essential cut-and-try experimentation in evolving concept statements to their present stage of development as presented in Appendix A. For example, in a working paper issued 15 July 1971 marking our first statement of the modified design, we proposed to carry over the "Pattern" concept from the Standard Study Procedure as discussed in the preceding section into the Core Concept Set, striving to describe each Core Concept itself as a Pattern. This ambition proved ultimately to be confusing and counterproductive and was eventually abandoned--but we learned this truth only through experimentation.

Many other such examples incident to the second phase of the project might be cited. To do so, however, would seem to serve no useful end and might well confuse the reader. What we will present in this section is, therefore, a set of succinct abstracts identifying the Core Concept Set not as it actually was in Phase II but as it is now at the end of Phase III, and as set forth in detail in Appendix A.

The Core Concept Set: A Summary Listing

In this section, we briefly describe the thirteen futures studies Core Concepts which have been organized into Learning Module outlines during this project, as set forth in detail in Appendix A to this report. For the reader interested in additional details about our treatment of any Core Concept, please consult the appropriate Learning Module in Appendix A.

In all, fifteen Learning Modules have been developed so far. Two Modules, however, are devoted to the Standard Study Procedure, leaving thirteen Core Concepts each presented in a separate Module. This Set, however, must and should be regarded as tentative and open. We hope and expect that additional, equally fundamental Core Concepts will be identified and developed by us or by others, more or less on a continuing basis as futures studies instruction spreads and the field itself develops.

Confronted by such a fluid and flexible state of affairs, the autonomous Learning Module approach is extremely helpful. Any Module which cannot withstand the test of instructional experience or peer critique may be withdrawn, revised, or combined with others without detracting from sound development work done in other modules.

A standardized introduction outline has been developed which may be used with any Module, so that instruction may literally begin with any Module desired. As detailed in Appendix A, the Standard Introduction introduces the concept of alternative futures; mentions the contrasting approaches of intuition and reason in seeking to foresee the future; explains that this curriculum is by design limited to the rational approach; and explains briefly the curriculum design as it has been set forth in this section.

The thirteen Core Concept Learning Modules developed to date are as follows:

The Time-Line (Learning Module 3). This Module emphasizes the essential mystery of Time, then presents a linear model of Time in which time is defined by events and events in turn are related to each other by the Time-Line. Three concepts of "future time" are then presented in terms of the Time-Line model.

Appraising Futures Reports (Learning Module 4). This Module identifies and briefly characterizes three types of futures reports other than the forecast. The Module then defines a forecast by its essential characteristics and discusses four factors which must be judged in appraising any forecast.

Futures Studies Methods (Learning Module 5). This Module identifies and briefly discusses six basic methods used in futures studies: authority, polling, projection, qualitative conjecture, quantitative conjecture, and modeling and simulation.

Change (Learning Module 6). This Module contrasts qualitative change with quantitative change, identifies three typical standards by which change rates may be measured, and identifies five basic change rates often encountered.

Alternative Futures (Learning Module 7). This Module presents the basic concept of alternative futures, discusses some basic relations among different alternative futures, and discusses some practical considerations about alternative futures which forecasters must take into account.

Forecastability (Learning Module 8). This Module presents a basic definition of forecastability, then identifies and discusses four basic factors which determine forecastability limits for any given topic.

Confidence In Forecasts (Learning Module 9). This Module identifies and discusses six factors which must be considered in estimating how much confidence should be placed in any forecast.

Attitudes Towards Futures (Learning Module 10). This Module identifies five basic attitudes toward the future, suggests that a forecaster's attitude may be reflected in his forecast, and discusses means for determining the forecaster's attitude by examining his forecast.

Causality And Futures (Learning Module 11).This Module presents and discusses the proposition that every forecast is based significantly on the forecaster's implicit assumptions about cause-effect relations. The Module also identifies and discusses five primary cause-effect concepts involved in any forecast.

Managability Of Futures (Learning Module 12). This Module characterizes the concept, "managability of futures," discusses the scope and some limits to the concept, discusses three approaches to futures managability, and distinguishes between authority and power in futures managability.

Values And Futures (Learning Module 13). This Module stresses the fundamental importance of considering human values and value priorities in forecasting alternative futures. An extremely simple values model is presented and critiqued to afford an appreciation of the importance and difficulty of considering values issues in forecasting alternative futures

Transcendental Change (Learning Module 14).This Module compares and contrasts transcendental change with other forms of change discussed in Module 6, then identifies and discusses five basic aspects of transcendental change.

Stability (Learning Module 15). This Module discusses the relations between stability and change, limits, and stress, then contrasts static stability with dynamic stability.

The Advisory Working Group's Role In Phase II

As mentioned previously (pages 13-14 of this report) an Advisory Working Group to assist the project was organized at the outset. A complete list of the AWG membership is given in Appendix D.

AWG members were kept informed and consulted as the futures studies curriculum survey analysis and subsequent proposed curriculum design modification already described (pages 24-28) were executed. Mr. Peter L. Shoup, President, PACIFIC HOUSE, Palo Alto, California agreed to serve as Coordinator of the AWG.

Throughout Phase II, we consulted extensively with individual AWG members informally. A formal, full-day meeting of the AWG was held on July 22, 1971 to review, recommend further modifications, and acknowledge the revised curriculum design. AWG members proved especially helpful in advising on instructional resources and methodologies.

While much of the AWG's most useful assistance took the form of informal, one-to-one conversations, formal documentation in the form of a meeting agenda, progress reports, and a fact sheet is replicated in Appendix D, so that the project record may be complete.

Experimental Offering Of The Futures Studies Course

By the Fall of 1971, curriculum development was judged to be sufficiently well advanced to justify proposing to the Cybernetic Systems Program and the Instructional Technology Department at California State University, San Jose, that an experimental version of the course be offered in the Spring, 1972 semester. Our proposal was approved. While the offering of an experimental course exceeded the scope of our original project proposal, we welcomed the opportunity to involve students as "collaborators" in developing the curriculum.

The experimental course syllabus and schedule are reproduced below. A roster of students who took the course is given in Appendix E of this report. We wish at this point to acknowledge the substantial and significant critical evaluation provided by our students, evaluations resulting in useful modifications of the new curriculum design.

Experimental Futures Studies Course Syllabus

Department and institution: Cybernetic Systems Program, California State University, San Jose.

Term: Spring Semester, 1972.

Credit: Three units.

Course Number and Title: C.S. 204,
Futures Studies Survey

Course meets: 5 PM to 6:40 PM Mondays, Room 209, Business Building. Laboratory sections meet by arrangement with instructors.

Instructors: Dr. Ronald L. Hunt
Professor of Instructional
Technology, School of Education

Mr. David C. Miller
Adjunct Professor
Cybernetic Systems Program

Prerequisites: Graduate standing,
instructors' permission

Text and materials:

1. Pre-publication edition, Futures Conditional, Robert Theobald, Editor.
2. Draft filmstrip script outlines, ADVENT Standard Study Procedure and Core Concept Set Learning Modules (supplied by instructors).
3. Extensive outside readings, as assigned.
4. Current newspaper and periodical items about the future, submitted weekly by students.

Course objectives:

1. To test and obtain student evaluation of ADVENT learning concepts.
2. To use and evaluate the text, Futures Conditional. By special request, our evaluation will be submitted to the author and to the publisher, Bobbs-Merrill. Ours is the first class to use the text.
3. To help students develop an informed awareness about the nature and dynamics of alternative futures.
4. To develop in students the capacity to evaluate and critique futures studies and forecasts published by others.
5. To provide a basis for further futures studies independently after students have completed this course.
6. To provide instruction and practice in the use of simple multi-media presentations about the future.
7. To achieve individual student learning objectives consistent with the objectives listed above.

Instructional methods:

1. Weekly 20-30 minute lecture followed by class evaluation of one ADVENT Learning Module.
2. Small group discussions to review completed assignments and complete classroom assignments.
3. Large group colloquia approximately once a month to discuss student-submitted news and magazine items about the future.

Term project:

Every student will be required to prepare and present to the class a 15-20 minute multi-media presentation dealing with some aspect of the future. Students are encouraged to collaborate on these presentations in small groups of two or three. Presentation topics to be negotiated by students and instructors.

Course Evaluation:

1. Students will be required to evaluate textbook assignments and ADVENT concepts on a continuing basis. A final textbook and course evaluation form will be completed by students.
2. Instructors will evaluate student performance on the basis of:
    a. Quality of effort demonstrated in the multi-media term project presentation.
    b. Quality of completed weekly assignments.
    c. Extent and quality of participation in classroom exercises and colloquia.
    d. Amount and nature of outside readings.
    e. A final examination.

Course Schedule:

February:

7	Course orientation
14	Time/I
21	Holiday
28	Time/II

March:

6	Time Patterns
12	Environment
20	The Observer
27	Observation Report Form

April:

3	Holiday
10	The Forecaster
17	Forecast Report Form
24	Stability

May:

	Student reports
24	Final examination week

Format of class meetings:

1. Discussion
2. Reports on studies, projects,readings.
3. Presentation of Standard Study Procedure.
4. Questions.

Assignments:

1. Readings from text.
2. Weekly news clippings,monthly discussions.
3. Science fiction readings and reports.
4. Multi-media presentation
5. Application of Standard Study Procedure.
6. Final exam, course and text evaluation.

The Experimental Course Experience

C.S. 204, Futures Studies Survey, was offered to twenty graduate-level students at California State University, San Jose during Spring semester, 1972, following the course syllabus and schedule outlined on pages 38-41 of this report. As mentioned, the class roster is reproduced as Appendix E to this report.

The course was conducted as a combination seminar and project development laboratory. The educational backgrounds of students enrolled represented engineering, cybernetics, business, computer sciences, education, psychology, mathematics, science, economic, art, and literature, all students having either a B.S. or B.A. degree.

While customarily the University holds seminar classes to a maximum of fifteen or sixteen students, enrollment in this instance was permitted to reach twenty, because of student interest, the experimental nature of the course offering, and the fact that two instructors had been assigned to the course rather than one. It was judged that nothing would be jeopardized by the enlarged enrollment while much would be gained by having more disciplines represented. Such proved in fact to be the case.

As set forth below, the experimental course was successful enough to be accepted for repetition in the Spring semester, 1973, offered this time by the Instructional Technology Department, School of Education,but once again in association with the Cybernetic Systems Program.

Students who took the course in the Spring of 1972 have expressed interest in further instruction at the workshop or project consultation level, and such a course has been included in the Fall, 1972 class schedule. In such an experience, students would pursue futures studies in projects of potential service to the community, state, or nation, or to business, education, or other fields much in the tradition of Frank Lloyd Wright's Taliesin or the famous Bauhaus in Germany. In the first experimental offering of this approach, the course will be offered by the University working in close cooperation with Pacific House, Palo Alto, a futures consulting firm with which the researchers are affiliated. In sum, the first experiment has already become a permanent working reality.

Major components of the futures studies instructional program as offered in C.S. 204 included:

1. Presentation of Learning Modules in first rough-draft form, covering the Standard Study Procedure and the first Core Concepts.

2. Readings selected by students from recommended bibliographies, with a special emphasis on science fiction. (As an interesting aside, most students indicated a long-standing unsatisfied interest in science fiction which this course gave them for the first time an academic opportunity to explore. Excellent sources of science fiction bibliographies are given in the Learning Guide, Appendix B, Section 16, page 16-3, items 5 through 9.)

3. Student team-project investigations with the object of preparing multi-media presentation for review and critique by the seminar-laboratory. Special workshops were conducted in the Instructional Technology Department to prepare students for the use of non-print media.

Classroom time was divided into three segments:

1. Presentation and evaluation of ADVENT materials.

2. Review and analysis of student readings.

3. Preparation and presentation of student team presentations.

Laboratory sessions were devoted to the application of ADVENT Observation and Forecast forms, and to preparation for and subsequent development of student team multi-media packages.

As discussed in our original proposal and cited on pages 16 and 18 of this report, course emphasis on student development and use of multi-media packages was founded on two principles. First, it is a sound principle of learning that conveying something to others is an excellent means by which to extend and reinforce one's own knowledge of a subject. Secondly, the futurist like other professionals increasingly will be required to formulate and present his ideas in multi-media forms to groups ranging from such small bodies as planning units to groups as large as commercial television audiences. In C.S. 204, students gained painful but valuable experience in using photography, cinematography, sound recording, display art, and presentation management techniques. Three students who "dared" producing a simple but impressive eleven-minute film for the course have now decided to produce a much more ambitious version as a collaborative master's thesis, and their project has been accepted for that purpose by the Cybernetics Systems Program.

With the encouragement of the author, Robert Theobald and the publisher, Bobbs-Merrill, students were given mimeographed pre-publication copies of the new textbook, Futures Conditional, in exchange for making an evaluation of the text. The text evaluation form showing outcomes is replicated in Appendix F of this report. Basically, the students felt that while the text on the whole achieved its stated objectives, it left them far from satisfied--possibly because the students took exception to the futures views offered in the book but found themselves unable to formulate or at least to articulate their own views about possible futures. A review of the text was written by one of the researchers (Miller) and will be published in the forthcoming issue of The Futurist, official publication of the World Future Society.

Apart from the text, students were required to read at least one science fiction novel. As can be noted in the course evaluation report (Appendix G of this report), readings and subsequent reports in the science fiction field proved to be important motivational aspects of the course.

Further, students were required each week to bring press and magazine clippings of articles relating to futures concerns. These clippings were held and, on three class occasions, were randomly retrieved by students for oral report and commentary to the seminar. This opportunity to share and analyse current studies and pseudo-studies of the future was found extremely enlightening by the students, and it is hoped may also have sensitized them to futures reports regularly carried in the general, commercial, and professional press.

Student Presentations In The Experimental Course

As specified in the course syllabus (see page 39, "Course Objectives," Item 7), one of the objectives in the experimental course was "to achieve individual student learning objectives consistent with" other course objectives. Students were requested to identify futures studies topics of personal interest to themselves and, when appropriate, to organize themselves into small teams for collaborative investigation and multi-media presentation before the seminar.

As it happened, eight such teams were organized and made their presentations during the last month of the semester on the following topics:

1. Contrastive attitudes about the future.
2. Human potentialities as leisure time increases.
3. The future of human perception.
4. Physical and psychological aspects of space flight.
5. The Shockley-Gong model of scientific thought.
6. Future applications of nuclear technology.
7. The machine shop in the Year 2000.
8. The evolution of the American family by the Year 2000.

Most presentations satisfied the multi-media requirement through resort to projected visual illustration accompanied by commentary. Other interesting approaches were also taken, however. One team produced an absorbing eleven-minute sound-color film devoted to contrastive attitudes about the future, using a typology presented in the text and featuring photographs and illustrations taken from advertisements and many sources appropriately "narrated" by popular music recordings. The presentation on leisure time took the form of a recorded, dramatized discussion between parents and children in the Year 2000. One team incorporated a simple paper-pencil game in the opening of its presentation which seminar participants played, thereby providing an engaging point of departure for the presentation.

On the whole, student presentations seemed to provide a useful learning experience, although the quality of their content and of presentation were not as high as we had expected. In retrospect, we suspect that our expectations were too great, given the experimental nature of the course, the ambitious objectives we set, student uncertainty and inexperience with multi-media presentation techniques, and--most important of all--their limited or non-existent previous exposure to the concept of alternative futures as opposed to linear, non-alternative futures. The notion of alternative futures seems upon first exposure to elicit confusion and uncertainty in many persons, probably because our western educational tradition is based on the premise that there is usually only one "correct," "best," or at least "expected" answer to any given question or position on any given issue. This discovery represented one of the most important insights reinforced by the experimental course and was reflected in the final design of the Curriculum Guide presented in Appendix A.

Student peer review and critique of student presentations also proved to be a valued learning experience for all concerned. A simple standard evaluation form was devised. A copy of this form was completed by every seminar member hearing each team's presentation. Immediately following the presentation, evaluation forms were completed, collected, and given to the presentation team members. The following class session provided a scheduled opportunity for the presenting team to respond to evaluation comments and to have a brief discussion, thus reinforcing the material presented and enabling all seminar members to discover how subsequent presentations might be improved.

Items on the student presentation evaluation form included:

1. Topic title.
2. Presentors' names.
3. Date.
4. "Three points on which I most agree are:"
5. "Three points on which I most disagree are:"
6. "My three questions are:"
7. "My three answers are:"
8. "My general comments are:"

Student Evaluation Of The Experimental Course

A student evaluation of the experimental course was administered during the final week of the semester, and was completed and returned by sixteen of the twenty students enrolled.

The evaluation form, a statistical analysis of the returns, and all students' general remarks made on the form are given in Appendix G to this report. In this section, we offer a brief summary of evaluation outcomes.

The evaluation instrument was a forced-choice, multiple-choice form, using mark-sensing punch cards for ready analysis. Fifty evaluation items were included, organized in four categories as follows:

1. Course objectives (15 items).

2. Course content (15 items).

3. Course instruction (10 items).

4. Course evaluation (10 items).

To summarize the results by category:

1. Course objectives (15 items):

A majority (75 %) of the students believed that course objectives had been clearly stated, although only half indicated that they understood the objectives at the outset of the course. Students stated that the instructors understood the course objectives at the 75 % level. A majority (75 %) of students felt that the objectives were realistic, and that the instructors had met the objectives at the 44 % level. About half of the students felt that the textbook used, Futures Conditional, complemented the course. (See Appendix F of this report for a more detailed student evaluation of the text.)

While 75 % of the students felt that their objectives in taking the course were realistic, 25 % contended that their objectives had not been clear to themselves. As a result of having taken the course, however, 84 % of the students expressed an interest in further course work in futures studies. Only 19 % reported that the course had satisfied their curiosity about the field.

2. Course content (15 items):

Those course content categories which attained the greatest student support on evaluation were the ADVENT Learning Modules, student presentations, and the science fiction readings.

Nearly half of the students (44 %) believed that the text, Futures Conditional, might have been dispensed with, while most (88 %) would have preferred to spend more time analyzing the science fiction readings. Many students (63 %) stated that the ADVENT Learning Modules made sense to them, while 38 % expressed the belief that the ADVENT Standard Study Procedure could be used by them in their personal futures planning.

More than half of the students (56 %) believed that the use of news and magazine clippings had contributed significantly to the content of the course.

3. Course instruction (10 items):

A majority (88%) of the students believed that the instructors were qualified to teach the course. The students also perceived that the instructors were willing to meet with them in developing their individual projects (94 %). Students also appreciated the use of the student-team presentation approach (94 %), and the "openness" of the teaching-learning style in the classroom (94 %). While only 25 % believed that the course was well planned and presented, and that the content merged well as a unit, 88 % expressed a desire as a result of the course to continue their studies of alternative futures.

4. Evaluation (10 items):

Nearly half (44 %) of the students rated the course in the upper 25 % of all courses they had ever taken in higher education, and about one-third (31 %) reported that they had done their best work ever in the class. Less than half (38 %) of the students believed that the evaluation procedures were made sufficiently clear to them, or that the methods of evaluation were consistent with the course (31 %).

Some final comments on course evaluation.

The reader is reminded that the experimental course was by design viewed as a combination seminar and project development laboratory. The only ADVENT Learning Module materials supplied the students were unillustrated, dittoed filmstrip scripts for the first drafts of the Standard Study Procedure Learning Modules and two Core Concepts (The Time-Line, Stability).

Given such circumstances, the researchers were gratified by the student reception accorded the experimental course and, as noted earlier, gained many valuable insights in the further refinement of the Learning Modules during Phase III of the project. We regard the fact that three-fourths of the students found such a primitive introduction to futures studies a sound and worthwhile experience as a solid indication that the approach taken by the project has real merit.

Based on students' in-class and on-evaluation form comments as well as comments made on the text evaluation form (see Appendix F), we would expect to use no textbook as such when the course is next offered at California State University, San Jose in the Spring Semester, 1973. It seems to us not that the text is invalid or not useful, but rather than the learner-directed design of the course makes other uses of the course time more worthwhile, especially assignments and exercises involving science fiction and current newspaper and periodical items.

The students seemed especially appreciative of the multi-media presentation team approach taken in the course--grateful perhaps as much for easing their anxiety about competence in such methods as anything else. For this reason, the next course offering will be given in the Instructional Technology Department rather than in the Cybernetic Systems Program, although as before the course will be sponsored jointly by the two units. By offering the course in Instructional Technology class rooms and laboratories, students will be provided with readier and more thoroughgoing access to all media, print and non-print media alike.

For further details concerning the course evaluation, the reader is requested to consult Appendix G.

Summary Comment On The Second Phase Of The Project

The futures studies curriculum design project as originally conceived, proposed, and approved was described in the Phase I report section preceding.

As actual work began on the project, an extensive survey of existing instructional practice in the field indicated that our initial design should be modified. It appeared that our proposed Learning Module dealing with the origins of futurist thought to recent times was not as badly needed as we had thought, while the emphasis we had given to the idea of Progress also appeared excessive in view of existing practices. Rather, there seemed to be a much greater need than we had realized for teachable/learnible basic concepts and a lesser but still real need for some pedagogic learning method which could provide comprehensible structure and order for neophyte students and instructors approaching futures studies for the first time. It also appeared that such an approach could contribute to an increased academic acceptance of futures studies as a legitimate subject for higher education; might help provide the inter- or transdisciplinary bridges needed between futures studies and other disciplines; and would lend itself well to an observed pronounced tendency by instructors and students to approach futures studies in terms of their own personal, diverse interests in many aspects of the future.

Accordingly, a modified curriculum design was conceived and placed in development, consisting of an extensively structured but readily mastered Standard Study Procedure and a Core Concept Set of basic ideas inherent in most futures studies, regardless of topic.

The Standard Study Procedure is basically nothing more than an application of the principle of systematic observation commonly employed in the natural and behavioral sciences. The Procedure is based on the assumption that the more carefully we observe or study a topic, the more we can know and understand about it, and thus the better informed we shall be in conjecturing about possible alternative futures relevant to the topic. The Procedure defines every study topic as a Pattern in its Environment which must be defined and described critically by the learner playing the role of Observer. Once a satisfactory observation report has been prepared, the learner assumes the role of Forecaster and is required to make detailed, item-by-item forecast estimates as to changes foreseen in the Pattern he has observed, as of the most distant time-point on the forecast time-horizon he has selected. The learner as Forecaster also is required to give confidence estimates for his specific and overall forecasts. The complete Standard Study Procedure including the two basic forms into which it has been incorporated is presented in Learning Modules 1 and 2 in Appendix A to this report. It is emphasized that the Procedure is designed explicitly for introductory instructional purposes, and is intended mainly to make the student appreciative of the many necessarily judgmental assumptions, estimates, decisions, and critical judgments which invariably determine the structure and content of any futures report. While in principle the Procedure might be used to engage in professional futures studies or futures research, in practice such an application is not recommended because the Procedure seems too awkward and unwieldy for such purposes.

The Core Concept in its present phase of development includes thirteen concepts as detailed in Learning Modules 3 through 15 in Appendix A to this report. Concepts treated include: The Time-Line; Appraising Futures Reports; Futures Studies Methods; Change; Alternative Futures; Forecastability; Confidence In Forecasts; Attitudes Towards Futures; Causality And Futures; Managability Of Futures; Values And Futures; Transcendental Change; and Stability.

In conceptualizing and pursuing initial development of the modified curriculum design, valuable suggestions, information, and critiques were supplied by members of the project's Advisory Working Group listed in Appendix D of this report.

While the project as approved required only initial development of basic concepts, progress was such that it was decided to experiment with an actual course offering in the Cybernetic Systems Program, California State University, San Jose in the Spring semester, 1972. The course enrolled twenty students and was presented as a combination introductory futures seminar and as a project development laboratory with students serving also as collaborators. A class roster is given in Appendix E of this report.

Objectives of the experimental course (C.S. 204, Futures Studies Survey) were to: test and obtain student evaluation of ADVENT learning concepts; to use and evaluate the text, Futures Conditional; to help the students develop an informed awareness about the nature and dynamics of alternative futures; to develop in students the capacity to evaluate and critique futures studies and forecasts published by others; to provide a basis for further futures studies independently after students have completed this course; to provide instruction and practice in the use of simple multi-media presentations about the future; and to achieve individual student learning objectives consistent with the objectives listed above. Course evaluation outcomes as discussed on pages 47 and 48 and in Appendix G of this report suggest that most of these course objectives were reasonably well attained. Sufficient student interest has been created to offer an advanced course in the field, and an improved version of the basic course will be offered in the Instructional Technology Department, California State University, San Jose during Spring semester, 1973.

Thus in Phase II of the project a basic modification of the curriculum design was accomplished, and an experimental opportunity to test the basic validity of the new design in an actual course offering was acquired and profitably exploited.

With the conclusion of the Spring, 1972 semester at California State University, San Jose the second phase of the project was completed. There remained the third and final phase of the project in which the curriculum design was completed, a few prototype filmstrip scripts were produced, the necessary Learning Guide materials were assembled, evaluated, and organized, and this final report was written. We turn now to a description of this final phase, Phase III, of the project.

-IV-

EVOLUTION OF THE PROJECT: THIRD PHASE

Since most of the product of Phase III of the project is presented in detail elsewhere in this report, this general description of Phase III fortunately can be brief. Major tasks accomplished in Phase III included:

1. Completion of the Curriculum Guide (see Appendix A).
2. Development of a few experimental prototype filmstrip scripts to test the validity of the Curriculum Guide as a basis for the multi-media Learning Module packages we had sought to enable. (See Appendix H)
3. Development of a Learning Guide (see Appendix B) to accompany the Curriculum Guide.

In this section, we offer brief descriptions and discussions for each of these three tasks.

Completion Of The Curriculum Guide

The basic concept of the Standard Study Procedure and a bare listing of candidate Core Concept topics was developed during the initial stages of Phase II of the project. During Phase II, virtually all development effort was invested in the Standard Study Procedure: specifying the Procedure in detail; designing the first rough drafts of the Observation Report Form and the Forecast Report Form; and preparing crude drafts of materials which could be experimented with in the course offering (C.S. 204 Futures Studies Survey, California State University, San Jose, Spring semester, 1972). Some work was done on two Core Concepts (The Time-Line and Stability). We chose, however, to defer further actual development until the course experience provided a surer insight as to what might be required.

The experimental course as expected gave us extremely valuable guidance. Among the important lessons learned were:

1. The Standard Study Procedure is teachable, learnible, and is seen by students as having value for them in organizing their futures studies.

2. Presentation of the Standard Study Procedure probably is best deferred until after some Core Concepts have been presented. While students approaching futures studies for the first time seem invariably to possess much relevant experience and knowledge and many pertinent concepts and methods, they have difficulty relating their capacities to futures studies. Presenting Core Concepts first may offer a perspective which will rather promptly make students more confident of their ability to study alternative futures.

3. Because the Learning Modules are by design general and abstract, a convenient, familiar example is useful in presenting each Module. (Eventually, we adopted the example of the Primary Nuclear Family as a standard study topic example to be used in every Module.)

4. The Standard Study Procedure forms required reorganization to improve their clarity.

5. The crude draft materials we had prepared for the course were much too compressed and cryptic.

Drawing on this experience, we revised the Standard Study Procedure, determined topics for the initial Core Concept Set, and developed the Curriculum Guide as presented in Appendix A to this report. A summary listing of the Learning Modules as actually developed during Phase III has already been presented in the discussion of Phase II activities (see pages 35-37 of this report). For the reader's convenience, however, we repeat the Learning Module title list here:

Title List, Futures Studies Curriculum Learning Modules

(See pages 35-37 for a descriptive listing and Appendix A for detailed Module outlines.)

LM-1: The Standard Study Procedure, Part I.

LM-2: The Standard Study Procedure, Part II.

LM-3: The Time-Line.

LM-4: Appraising Futures Reports.

LM-5: Futures Studies Methods.

LM-6: Change.

LM-7: Alternative Futures.

LM-8: Forecastability.

LM-9: Confidence In Forecasts.

LM-10: Attitudes Towards Futures.

LM-11: Causality And Futures.

LM-12: Managability Of Futures.

LM-13: Values And Futures.

LM-14: Transcendental Change.

LM-15: Stability.

Development Of Filmstrip Script Prototypes

While Phase II of the project witnessed an extensive modification of the original curriculum design concept, our concept of a series of autonomous or free-standing multi-media Learning Modules in which the curriculum ultimately should be embodied not only was retained but its value was seen as even greater than we had previously thought. (The initial discussion of the Learning Module approach is summarized on pages 14-17 of this report.)

Our own experience with the experimental course confirmed our conviction that learner-oriented and directed courses generate more student interest and participation than any amount of classroom time can begin to satisfy. In such a context, it becomes essential to banish from class sessions any activity which can be pursued independently between classes. And while the Learning Modules might be producible in textbook form, such a format is unresponsive to students' need and desire to produce and interact with multi-media materials. Thus we became even more convinced that the Learning Modules we designed should at least be compatible with a multi-media format.

In the experimental course, it was too early in the project to produce suitable multi-media materials, although we did manage to make and use some simple overhead transparencies to accompany the Time-Line Learning Module. The student reception of this Module and of their own multi-media productions, however, convinced us of the validity of our proposed multi-media approach.

The project as approved, of course, did not require production of the materials themselves, although we had indicated our willingness to develop a few prototypes if possible. It was in that context that the crude-draft filmstrip scripts and a few illustrations were devised and used with some success in the course.

Having learned a great deal from the experimental course, during Phase III of the project we felt challenged to demonstrate to our own satisfaction that the Curriculum Guide we were evolving was in fact amenable to translation into multi-media form. Accordingly, we began with the crude-draft scripts dealing with the Standard Study Procedure as used in the experimental course.

The original script had shown itself to be much too compressed, having tried to treat the complete Standard Study Procedure in one hour. Further, we had learned from the course that the multi-activity approach we prefer typically left no more than twenty-five minutes per session to present and discuss a concept. (Even had the materials been available to students outside of class in a Learning Materials Center, the entire twenty-five minutes could have been well used to discuss the concept after they had worked through the materials.)

Accordingly, we revised our concept of how to package the Learning Modules in a multi-media format. Originally, we had intended that each Module would ultimately be packaged in a single, thirty-minute filmstrip, accompanied by an audio cassette soundtrack and a printed Learning Guide. We now decided that each Module would be allotted sixty minutes presentation time, but that it would be organized into four sound filmstrips, each having a presentation time of about fifteen minutes. Thus for instructional reasons we chose to double the total presentation time while halving the presentation time of each individual filmstrip.

As a validation experiment to test our revised packaging concept, we chose the Standard Study Procedure. Our course experience had taught us that the Procedure required not one, but two Learning Modules for adequate treatment. Accordingly, we divided and organized the Procedure Curriculum Guide material into two Modules, as presented in Appendix A. We then drafted and revised into shooting scripts eight filmstrip scripts covering Modules 1 and 2. We also identified appropriate illustrations for each filmstrip frame. As of the completion date of this project, actual illustrations for Modules 1 and 2 have not been produced, and of course are not technically required by the project as funded. As a demonstration that the Modules outlined in the Curriculum Guide do lend themselves to filmstrip treatment, however, the reader is referred to Appendix H, where an actual production script for Learning Module 1 has been reproduced.

Development Of The Learning Guide

In addition to completing the Curriculum Guide and experimenting with prototype multi-media packages for the curriculum as developed, the major effort in this third, final phase of the project was invested in development of suitable Learning Guide materials to accompany the Curriculum Guide, as promised in the original proposal.

The Learning Guide developed speaks for itself, and may be consulted in Appendix B of this report. Some brief discussion of the Guide at this point may be useful, however.

The Learning Guide is extensive, and is organized into nineteen sections, as follows:

Sections 1-15. Each of the first 15 sections in the Learning Guide is designed for use with its corresponding Learning Module as presented in the Curriculum Guide in Appendix A, with the first section of the Learning Guide corresponding to Learning Module 1, etc. Each section suggests three exercises, three assignments, three references, and three films which can be used to pursue the basic concept treated in the corresponding Learning Module.

Section 16: A Selective Guide To Futures Studies Literature. This Guide cites references to sixteen other futures studies bibliographies; 14 futurist periodical publications; seventeen futurist organizations or guides to futurist organizations; 256 books in the field; 41 reports and monographs pertinent to futures studies; and 52 futures studies articles.

Section 17: A Selective Guide To Futures Films. This Guide cites three references to other publications about futures films, then provides a descriptive listing of 114 futures films available (for the most part) from the Extension Media Center, University of California, Berkeley. This Guide is a by-product of a major review of recent and other futures films made by one of the investigators (Miller) for EMC during the Spring and Summer of 1972. Further information about the EMC futures collection is available upon written request to EMC. We wish to thank EMC's Director, Mr. C. Cameron McCauley for his generous assistance in this important by-product of the present project, as well as for his services as a member of the project's Advisory Working Group.

Section 18: A Referral Title List Of Popular Recordings For Use In Futures Studies. This is a tentative list of 587 popular music recordings having potential value for futures studies instruction which was compiled in 1969 by one of the investigators (Miller), and which has been included in this Learning Guide for such guidance as it may offer but equally with the hope that it may inspire further attention to music treating or pertinent to futures.

Section 19: A Referral Title List Of Poems For Use In Futures Studies. This is a tentative list of 786 poems identified in Granger's Index To Poetry/29/ whose titles or first lines suggest they have potential value for futures studies instruction. It is hoped that this listing may inspire further attention to poetry treating or pertinent to futures, possibly even stimulating one or more anthologies of poetry about futures.

Summary Comment On The Third Phase Of The Project

The third and final phase of the project was devoted to completion of the Curriculum Guide presented in Appendix A; to development of a few experimental prototype filmstrip scripts; and to development of a Learning Guide (Appendix B) to accompany the Curriculum Guide.

Completion of the Curriculum Guide drew extensively on experience gained in offering the experimental course C.S. 204 Futures Studies Survey in the Cybernetic Systems Program, California State University, San Jose during Spring semester, 1972. While the course demonstrated that the Standard Study Procedure was both teachable and learnible, we learned that the presentation required expanded treatment, that the forms in which the Procedure was embodied required revision, and that the Procedure is perhaps best presented after presentation of some Core Concepts through which students may relate their existing knowledge, concepts, and experience to futures studies. During Phase III, appropriate revisions were made in the Curriculum Guide and are incorporated in the Guide as presented in Appendix A.

While the proposal as approved did not commit us to development of prototype learning materials embodying our multi-media packaging concept for the Learning Modules, we felt inclined to test our concept on at least one Learning Module, the experimental course offering having convinced us that the multi-media materials approach is most worthwhile. Accordingly, we experimented with crude-draft scripts covering Learning Module 1 (Standard Study Procedure, Part I) which had been prepared for use in the experimental course. Having learned that our original packaging specifications were inadequate, we settled on a standard format in which each Learning Module would be given sixty minutes' presentation time in the form of four, fifteen-minute filmstrips accompanied by audio cassette narration and printed Learning Guides. This package format concept was tested by actually writing four filmstrip scripts covering Learning Module 1, and specifying visual illustrations for each filmstrip frame. While this prototype experimentation was not required by the project and was not completed as of the project termination date, the actual filmstrip scripts for Learning Module 1 are reproduced in Appendix H of this report as a demonstration that the package format proposed actually can be attained.

A major portion of the Phase III effort was devoted to development of a Learning Guide (Appendix B) to accompany the Curriculum Guide (Appendix A).The Learning Guide is organized into nineteen sections. The first fifteen sections represent individual guides for each of the fifteen Learning Modules presented in Appendix A. Section 16 of the Learning Guide is A Selective Guide To Futures Studies Literature; Section 17 is A Selective Guide To Futures Films; Section 18 is A Referral Title List Of Popular Recordings For Use In Futures Studies; and Section 19 is A Referral Title List Of Poems For Use In Futures Studies.

-V-

CONCLUSIONS AND RECOMMENDATIONS

Having participated actively in the development of futures studies and futures research since the mid-Sixties; and having lived intimately with the challenge of futures studies curriculum development during the eighteen-month course of this project--in the dual and simultaneous roles of researchers _and_ futures studies instructors--we have reached some conclusions and wish to make some recommendations pertaining to futures studies instruction in American higher education. Our conclusions and recommendations are of two types: those specific to futures instruction _per se_, and more general conclusions and recommendations pertaining to the future evolution of futures studies programs in colleges and universities. Accordingly, our findings are submitted in two parts.

Specific Conclusions

1. The sound development of futures studies instruction in U.S. colleges and universities requires definition of a body of concepts and methods which can be taught, learned,and applied within the perspective of any discipline, profession, or issue sector.

2. There is a keen and rapidly growing interest among college and university faculty concerning the development of futures studies concepts and teaching methodologies.

3. On the whole, futures studies instructors and students are less interested in traditional lecture-term paper-final examination instruction styles than in activistic, participative styles focused on issues about the future which especially interest or concern them.

4. Our project offers a successful pilot demonstration that futures studies methods can be devised and effectively employed to offer instruction in the field which:

a. Does offer a body of concepts and a method which can be taught, learned, and applied within the perspective of any discipline, profession, or issue sector.

b. Does avoid or at least does not require lecture-term paper-final examination instruction styles and focuses instead on student-generated multi-media futures studies and presentation projects which greatly enhances student engagement and learning and which also encourages instructors and students to focus their studies on futures issues which especially interest or concern them.

c. Does strive to define and present concepts which by improving the delineation of the field can enhance eventual acceptance of futures studies as a valid intellectual enterprise by those representing older, better established disciplines.

Specific Recommendations

1. The futures studies curriculum curriculum we have developed should be widely considered for critical review and experimental use by college and university faculty contemplating or planning a futures studies course.

2. The curriculum is specifically designed to be used in bits and pieces in any desired sequence and should be so regarded and used by any instructor drawing on it to develop his own course. We strongly recommend that no instructor attempt to use the complete curriculum exactly as it is presented.

3. Much thought and great care should be given to the matter of defining the topical focus of any futures studies course, an objective which must be accomplished early in the course by instructor and students. Student

interest in futures studies often is intense but undirected. If at all possible, a class consensus about topical content should be established. If this proves impractical,the instructor must early in the course clearly dilineate the topical focus of the course.

5. The student multi-media presentation term project approach should be experimented with. While students and instructors alike often are inexperienced and fearful about this "loose","unscholarly," and "too difficult" approach, our experience is that the anxiety and trauma are richly compensated for. Students are highly motivated once they actually become engaged in such a project. Furthermore, they teach and learn from each other much more than would be the case if term projects are limited to the routine term papers.

6. Textbooks should be dispensed with in futures studies courses. This recommendation stems from the vast scope of the field and from the precept that the best futures instruction is that which focuses directly and constantly on instructors' and students deepest interests and concerns about the future. In lieu of a text, students should be required regularly to submit and share news stories, articles, and other materials from their current general readings which in their view is relevant to futures studies. Discussion of student submission is an excellent means of helping the class perceive for itself the range and variety of estimates, perceptions, and values which shape society's views about alternative futures. Directed readings in science fiction, utopian literature, and professional futurist literature provides a further worthwhile substitute for a single textbook, drawing on suitable bibliographies such as the one given in Appendix B to this report.

General Conclusions

1. While the number of institutions of higher learning now offering futures studies instruction is still small (perhaps 300 out of some 3500 institutions as of 1971), interest in the field is keen and is increasing rapidly. We would expect that--well within the next five years--some sort of course dealing with futures will be offered on most campuses at the graduate level, undergraduate level, or both. Thus effective demand for acceptable canons and practices in futures studies instruction can be expected to increase sharply in the imminent future.

2. With general enrollments declining in most colleges and universities, fields such as futures studies which can attract increasing interest and support may find themselves rapidly transformed from campus pariahs and outcasts into belles of the academic ball --with all the opportunities and dangers such popularity entails.

3. As futures studies instruction spreads, the scope, structure, content, and validity of the field must rapidly become a pressing issue, and almost certainly will become a bitterly controversial matter.

4. Much--perhaps even most--of the existing and prospective capacity to teach futures studies and to engage in professional futures research exists apart from traditional academic enterprise. If futures studies instruction is to be based on the best available resources, a great deal of academic flexibility, adaptability, and "risk-taking" will be essential.

5. In most institutions of higher learning, futures studies may find its "natural" home in one of three sites:in the newer engineering and technological curricula which seek to incorporate such broader societal concerns as Technology Assessment or Environmental Quality; or in interdisciplinary programs in the behavioral and social sciences; or in the New Colleges, Experimental Colleges, and Universities Without Walls as advocated by the Carnegie Commission on Higher Education and other groups concerned with educational reform.

6. Since most institutions of higher learning must of necessity shortly prepare themselves for basic transformations during the next decade or so, a well-planned, suitably financed, and strongly supported program whose purpose it is to probe the institutions' own alternative futures may in many cases be the most effective way to introduce and develop appropriate futures studies programs on given campuses.

7. Experience with other graduate interdisciplinary training programs-including the Cybernetic Systems Program at California State University, San Jose--strongly suggest that new degree programs or major and minor programs in futures studies should not be regarded or represented as pre-professional training programs per se. While futures studies perspectives and skills will become increasingly saleable, to us it seems unlikely that a specialized new professional occupation--futurist--will emerge, at least not in the same sense that the professional occupations of psychologist or economist now exist.

General Recommendations

In view of our general professional experience and of the specific conclusions cited above, we respectfully submit the following general recommendations concerning futures studies in American institutions of higher education:

1. Board chairmen and members, presidents, deans, and senior executives in every academic institution should designate some one by name whose permanent mission it is to track current developments in futures studies and research, and to relate and report these developments in terms of the institution's own problems and mission priorities. Not every institution can or should develop a futures studies program, but the decision in any case should be based on informed judgment, not on ignorant neglect.

2. Any proposal by faculty to develop a futures studies course or program should be obliged to relate the activity explicitly to the long-range needs of students, the institution and society. We refer here to proposals for permanent programs; limited-duration, experimental courses or other activities in the futures field should be much encouraged as a useful means of evaluating the field's potential for a given institution.

3. Special attention should be given to the increasing demand for non-credit or non-degree futures studies instruction by off-campus groups for the purpose of professional in-service training, personal growth and development, or expression of civic concern for the society's broader, long-run future.

4. As implied earlier, serious thought should be given to the possibility of organizing a continuing, campus-wide program whose purpose it is to probe the institution's own alternative futures. In addition to such a project's potential contribution to academic long-range planning, the activity might well yield as an important by-product a design concept for a permanent and appropriate futures studies program for the institution.

5. Institutions should once again review their philosophies and practices concerning interdisciplinary programs--this time in view of futures studies' potential place in and contribution to such programs.

LIST OF REFERENCES AND CITATIONS

1. Eldredge, Wentworth H., "Education for Futurism in the United States: An On-Going Survey and Critical Analysis," in Technological Forecasting and Social Change, volume 2, 1970, pages 133-148.

2. Rojas, Billy and Eldredge, Wentworth H., Futures Studies Syllabus. Amherst, Massachusetts: University of Massachusetts School of Education Program for the Study of the Future in Education, revised edition, April 15, 1971, 86 pages, mimeographed.

3. Toffler, Alvin, Future Shock. New York: Random House, 1970, 505 pages, paper, $1.95.

4. Drucker, Peter F., The Age Of Discontinuity. New York: Harper & Row, 1969, 402 pages, $7.95.

5. Goals For Americans: Programs For Action In The Sixties; Comprising The Report of The President's Commission On National Goals. Englewood Cliffs, New Jersey: Prentice-Hall, 1960, 372 pages, paper.

6. Lecht, Leonard A., Goals, Priorities, and Dollars: The Next Decade. New York: The Free Press, 1966, 366 pages.

7. Technology and the American Economy. Washington, D.C.: National Commission on Technology, Automation, and Economic Progress, February, 1966, U.S. Government Printing Office Publication Number 206-754-66.

8. Toward Balanced Growth: Quantity With Quality. Washington, D.C.: National Goals Research Staff, July 4, 1970, 228 pages, U.S. Government Printing Office.

9. Jantsch, Erich, Technological Forecasting in Perspective. Paris: Organization for Economic Cooperation and Development (OECD), 1967, pages 304-309.

10. Toward A Social Report. Washington, D.C.: U.S. Department of Health, Education, and Welfare, 11 January 1969, 101 pages, paper, U.S. Government Printing Office.

11. *Goals for Dallas*. Dallas, Texas: Graduate Research Center of the Southwest, 1966, 310 pages, paper.

12. "Municipal Goal-Setting," International City Management Association Information Service Report Number LS-1, January 1970, volume 2, 16 pages.

13. "Our Future Business Environment," revised edition, July, 1969, by Business Environment Group, The General Electric Company, 570 Lexington Avenue, New York, New York 10022.

14. "Toward The Year 2000: Work In Progress," in *Daedalus, Journal of the American Academy of Arts and Sciences*, Summer, 1967, pages 639-994.

15. *Toward The Year 2018* (essays in observance of the Fiftieth Anniversary of the Foreign Policy Association). New York: Cowles Education Corporation, 1968, 177 pages.

16. *Creating the Human Environment: A Report of the American Institute of Architects*, by Gerald M. McCue, William R. Ewald, Jr., and The Midwest Research Institute. Urbana: University of Illinois Press, 1970, 339 pages.

17. Ewald, William R., Jr., series editor, *Environment and Change, The Next Fifty Years* (1968); *Environment and Policy, The Next Fifty Years* (1968); and *Environment for Man, The Next Fifty Years* (1967). Bloomington, Indiana: Indiana University Press, variously paged.

18. *Technology and Education In The 21st Century*. Washington, D.C.: San Francisco State College Center For Technological Education, published by Communication Service Corporation, 1967, 107 pages.

19. Morphet, Edgar L. and Ryan, Charles O., editors, *Designing Education for the Future*. Number 1: Prospective Changes In Society By 1980, 1967, 268 pages; Number 2: *Implications For Education of Prospective Changes in Society*, 1967, 323 pages; and Number 3: *Planning and Effective Needed Changes in Education*, 1967, 317 pages. New York: Citation Press.

20. Helmer, Theodore (with contributions by Bernice Brown and Theodore Gordon), *Social Technology*. New York: Basic Books, 1966, 108 pages.

21. Kahn, Herman and Wiener, Anthony J., The Year 2000: A Framework for Speculation on the Next Thirty-Three Years. New York: The Macmillan Company, 1967, 431 pages.

22. The Futurist: A Journal of Forecasts, Trends and Ideas About the Future, published bi-monthly by the World Future Society, "An Association for the Study of Alternative Futures," Post Office Box 19285, Twentieth Street Station, Washington, D.C. 20036.

23. Rojas, Billy, Futures Studies Bibliography. Amherst, Massachusetts: University of Massachusetts School of Education Program for the Study of the Future in Education, January 15, 1970, 107 pages.

24. "Universities Offer Courses in the Future," The Futurist, April, 1969, pages 38-40.

25. Personal communication, December, 1969.

26. "Comprehensive Long-Range Forecasting Systems for Management," by David C. Miller in Jungk, Robert and Galtung, Johan, editors, Mankind 2000. London: Allen & Unwin, Ltd., 1969, 368 pages.

27. Op. cit.,Reference 16.

28. Hunt, Ronald L., editor, Citizens for the 21st Century. Report to the State Board of Education. Berkeley, California: California State Committee On Public Education, 1967, 55 pages.

29. William F. Bernhardt, editor, Granger's Index To Poetry. New York: Columbia University Press, Fifth Edition, 1962.

Note: For a selective general guide to the futurist literature, the reader should consult Section 16 in Appendix B of this report entitled "A Learning Guide For Use With Futures Studies and Futures Research Concepts And Methods: A Curriculum Guide."

Introduction To Futures Studies Concepts and Methods:

A Curriculum Guide

Objectives

The objectives of this curriculum are:

1. To create an awareness of and some critical appreciation for some fundamental concepts and methods employed in futures studies.
2. To create an awareness of and some critical appreciation for the utility and limitations of futures studies as an intellectual activity.
3. To provide a solid yet flexible introductory futures studies learning/teaching methodology which can be used:
    - *a. At more than one academic achievement level, although primarily at the first-year graduate student level.
    - b. Within the perspective of any academic or professional specialty.
    - c. To study any futures topic or issue whatsoever.
    - d. By an instructor in a class whose students represent one, several, or many undergraduate majors.
    - e. By a graduate adviser directing graduate students engaged in independent study.
    - f. By a graduate student engaged in undirected independent study.

*While this curriculum guide is intended primarily for graduate course-work at the first-year graduate level, it is believed that the guide may in some cases be useful for other purposes as listed above.

Scope and Sequence

Scope

This is an introductory curriculum. As such, it exposes students to most concepts and methods used in futures research and futures study. Most topics are treated in a cursory manner of necessity. Learning Guide references are provided with each topic so that instructors or students who desire to treat given topics in greater depth may consult the professional literature. The only topic treated in depth is an original futures studies teaching/learning method, the Standard Study Procedure.

Sequence

The curriculum offered is by design conceptual and extremely general in nature. The curriculum is designed to be used with topical content and focus provided by the instructor and/or the students. In any given course, it is doubtful that the complete curriculum outlined here could or even should be treated. Which curriculum topics are treated in a given course--and in which order--must be decided in each case by the instructor.

For that reason, the curriculum outline is presented as a series of "free-standing modules." That is, any topic of interest may be presented as the relevance of that topic becomes apparent. Any curriculum topic may be preceded or followed by any other. A basic Introduction to the curriculum is provided separately and may be used with whichever topic is treated first.

In the broadest sense, the curriculum offers two basic components: (1) The Standard Study Procedure, and (2) A set of Core Concepts. The Standard Study Procedure is presented in Learning Modules One and Two, which should both be presented in the order given *if* the Standard Study Procedure is to be used. Otherwise, each Core Concept is treated in one separate Larning Module. The Standard Study Procedure may be used with or without the Core Concept Learning Modules. In the same way, any or all Core Concept Learning Modules may be used with or without the Standard Study Procedure Learning Modules.

List of Learning Modules

LM 1	The Standard Study Procedure, Part I
LM 2	The Standard Study Procedure, Part II
LM 3	The Time-Line
LM 4	Appraising Futures Reports
LM 5	Futures Studies Methods
LM 6	Change
LM 7	Alternative Futures
LM 8	Forecastability
LM 9	Confidence in Forecasts

LM 10 Attitudes Toward Futures
LM 11 Causality and Futures
LM 12 Manageability of Futures
LM 13 Values and Futures
LM 14 Transcendental Change
LM 15 Stability

Standard Introduction*

*This introduction should be used with whichever Learning Module is presented first.

Objectives

1. To introduce the concept of Alternative Futures.
2. To explain that the curriculum takes a reasoned rather than an intuitive approach to futures studies.
3. To identify the two broad components in the curriculum: Standard Study Procedure and Core Concepts.

Presentation Time

Fifteen to twenty-five minute lecture, plus time for discussion.

Exercises, Assignments, References

Consult Learning Guide

Topical Outline

1. Alternative Futures: Logically, there is no period of time which can be thought of as the future in the same sense that we can speak of the present. No event is certain until it has actually occurred. Prior to its occurrence, any event or state of affairs is only one among many possibilities. Each different possible future occurrence or state of affairs may properly be called an alternative future.

2. Why is it useful to speculate about alternative futures if there is no single, fixed future? Such speculation is useful only if we accept the view that we ourselves can exercise some choices in shaping futures. That view is accepted as fundamental in this curriculum.

3. There are two fundamental approaches to conjecturing

about possible alternative futures: Intuition and Reason.

4. Intuition is an ancient and widespread approach used to try and foresee and foretell futures. Astrologers, fortune tellers, diviners, and all of us who "play hunches."

5. Reason, too, has been used since ancient times to foresee futures. Knowledge of the seasons and of movements of stars in the heavens have long been used in navigation and agriculture. Many other examples.

6. This course is based on reasoned conjecture rather than on Intuition, even though both are ancient, important, and equally honorable.

7. Two broad components offered in the course: a set of Core Concepts and a Standard Study Procedure.

8. Each Core Concept in the Set of Core Concepts presents a fundamental idea which can be used in speculating about alternative possible futures. (Refer to list and read).

9. The Standard Study Procedure is based on careful, systematic study or observation of any topic or Pattern whose alternative futures interests or concerns you. On the basis of your observation, an equally systematic forecast can be made and reported.

10. The Core Concepts and the Standard Study Procedure may be applied to any study topic at all, whether selected by the student or assigned by the instructor.

11. The concepts and methods presented in this course are intended only to be "take-off points." They are neither final nor ultimate. You should design and test your own concepts and study methods.

12. Use of the Standard Study Procedure is optional, at the discretion of the student or instructor.

13. Use of the Core Concepts is optional, at the discretion of the student or instructor. Any number of Core Concepts presented may be used or omitted, in any sequence desired.

Learning Module 1: THE STANDARD STUDY PROCEDURE, PART I /LM1/

Objectives:

1. To explain the principle, "Foresight Through Insight," on which the Standard Study Procedure is based.
2. To present and discuss the role of the Observer in the Standard Study Procedure.
3. To present and discuss the concept of the Pattern in the Standard Study Procedure.
4. To present and discuss the concept of the Environment in the Standard Study Procedure.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In studying alternative futures, some method or system--no matter how inadequate--is better than no method or system.
2. The Standard Study Procedure is one method or system for studying alternative futures. It is a way to begin. Use another method if you prefer. But some method is essential.
3. The SSP is based on the principle, "Foresight Through Insight." Meaning: the better informed we are and the more clearly we understand a topic in its present state, the better able we shall be to conjecture intelligently about its alternative futures.
4. Every observation involves three basic factors: the Observer, the Pattern, and the Environment.
5. The Observer has several basic decision tasks to complete:

    a. Select topic or Pattern for observation.
    b. Clarify nature of his interest in Pattern.

c. Decide what he hopes to gain through observation. /LM1/
d. Plan and conduct his observation.
e. Make and report a series of critical decisions about the Pattern and the Environment in which it was observed (see below).
f. Different Observers of the same Pattern in the same Environment may have quite different interests, make quite different observations, and report quite different findings.

6. The Pattern is a generalized concept we can use to define and describe any study topic we choose. Use of the Pattern concept forces us to emphasize central or critical features and relationships, thus maximizing understanding and insight. This in turn improves our foresight, that is, our capacity to conjecture intelligently about the Pattern's possible alternative futures.

7. The Observer must complete the following Pattern description tasks:

   a. Name the Pattern accurately and completely.
   b. Identify the Key Elements in the Pattern.
   c. Identify the Key Attributes of each Key Element.
   d. Identify the Key Relations of each Key Element.

8. A Pattern may exist in many different dimensions or environments simultaneously: in space, in time, in society, etc.

9. A basic Pattern accommodates much individual variation within its form, e.g. all snowflakes are much alike, yet every snowflake is unique.

10. The Environment consists of the setting or collection of features in which the Pattern is contained or expressed.

11. The Environment of a Pattern is usually very complex. The challenge is to decide which aspects of the Environment are of critical importance to the Pattern under observation.

12. The Observer must complete the following Environment description tasks:

a. Fix the scope or boundaries of the Environment considered. /LM1&2/
b. Identify Key Interfaces between PATTERN and ENVIRONMENT.
c. Identify Key Environmental Resources.
d. Identify Key Environmental Constraints.

13. Under Point 8 above, it was noted that a Pattern may exist in many different Environments simultaneously. In describing any Pattern's Environment, the Observer must indicate all critical Environments and must fix the scope or boundaries for each Environment identified.

14. The distinction between an Environmental Resource and an Environmental Constraint is often difficult, and ultimately is always a matter of the Observer's own best critical judgment.

Learning Module 2: THE STANDARD STUDY PROCEDURE, PART II

Objectives:

1. To present and discuss the Observation Report Form.
2. To present and discuss basic forecasting standards.
3. To present and discuss the Forecast Report Form.
4. To discuss the limits and utility of the Standard Study Procedure.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. The Observation Report Form is used to make sure that every observation task required by the Standard Study Procedure has been accomplished (see LM 1), and that a systematic report has been made for every task.

2. Use of the Observation Report Form is optional, but offers two advantages: (a) makes it easier to look up facts when you are making a subsequent revision or extension of an earlier observation; (b) makes it easier to identify agreements and disagreements when the same topic is being observed by several persons.

3. Consult a copy of the Observation Report Form at this point (see pages A-11 to A-14 following). /LM2/

4. Three general instructions for Observation Report Form:

   a. A separate copy of the Form must be completed for each observation.
   b. All items must be completed, but in any order desired.
   c. Any item may be continued on a separate, numbered page if more space is needed.

5. Completed Observation Report Form provides the basis for making a Forecast about the Pattern observed because of the "Foresight Through Insight" principle explained in LM 1 (Point 3).

6. A forecast is only one type of futures report. Other types of futures reports are discussed in Learning Module 4. The forecast, however, is the standard futures report used in the Standard Study Procedure because it is the most useful--although also the most difficult to make.

7. A forecast must meet seven basic forecasting standards:

   a. Identified as either non-prescriptive or prescriptive. (a non-prescriptive forecast is one in which forecaster is equally interested in all most probable alternative futures. A prescriptive forecast is one in which forecaster is more interested in certain alternative futures than in others, because he hopes to achieve or avoid them through planning and action).

   b. Future time-interval covered by forecast must be clearly identified.

   c. The environments and the scope and boundaries considered for each environment must be clearly identified (See LM 1, Point 12).

   d. The forecaster's own critical assumptions and judgments must be clearly stated.

   e. Information used in forecast--and its sources--must be clearly indicated.

   f. The specific changes or differences forecast must be clearly stated. /LM2/

   g. The forecaster's level of confidence in his own forecast must be clearly stated.

8. The Forecast Report Form is used in the Standard Study Procedure to make sure that the seven basic forecasting standards listed above are satisfied, and that a systematic report of forecast has been made.

9. Consult a copy of the Forecast Report Form at this point (see pages A-15 to A-26 following).

10. Three general instructions for Forecast Report Form:

   a. Forecast Report Form must be used in conjunction with an Observation Report Form completed previously.

   b. All items must be completed, but in any order desired.

   c. Forecast Report Form should be as detailed and comprehensive as possible. Use as many extra numbered continuation pages as required.

11. Forecast Report Form requires you to make a systematic forecast of future alternatives in the Pattern and Environmental descriptions given previously on the Observation Report Form. For that reason, information recorded on the Observation Report Form must be copied or consulted at many points while completing the Forecast Report Form.

12. Forecast Report Form also requires you to indicate level of confidence in the many individual forecasts required by the Form, and in the overall forecast as well.

13. The Standard Study Procedure has now been presented in detail. Now let's mention some of its limits and restrictions:

   a. Makes use of reason only, even though intuition is an ancient and powerful factor in trying to foresee and shape future events.

   b. Even within the framework of reason, SSP relies mainly on logical analysis, de-emphasizes rational synthesis. Both analysis and synthesis are important in studying alternative futures:

analysis in understanding how something is and synthesis in conjecturing about all the different ways something could be in futures. /LM2/

14. SSP also employs extensive structure and detail. Is all this structure and detail necessary? Almost certainly not--for any given person on any particular occasion. Yet we find it difficult to think and to discuss with others about possible futures because we have no common framework of concepts to share. This course does offer a comprehensive, detailed framework.

15. Any given instructor, student, or class should pick and choose from the course elements only those elements which seem useful or interesting to them for their purposes. Course elements are "free standing" and may be used in any number or sequence desired.

16. The course offers only a set of conceptual tools. It consciously avoids specifying topical content. Its purpose is to help you begin learning how to think about alternative futures. What to think about must be your own decision.

17. Your interests, opinions, and judgments about alternative futures are as "authoritative" and valid as anyone elses. "Experts" and "authorities" about futures research may have a greater number of relevant facts and may have thought harder and longer about them. Yet human values, priorities, needs, and desires are the basic factors which will shape our human futures most. In such matters, we are all equally authoritative.

ADVENT FORM I:

OBSERVATION REPORT FORM

Page 1

General Instructions:

1. Complete one copy of this Form for every separate observation made.
2. All items must be completed, but may be completed in any order.
3. To encourage critical conciseness, limited space is provided. Whenever longer replies are essential, continue that item on a separate blank page, number the page, and indicate that number in the space provided.

Item Number:

1. This Observation begun (day, month, year):

   ____

   and completed:

   ____

2. Observer's full name:________________________

   Street_____________________City________________

   State ____________ZIP______Phone________________

3. Observer is a:_______________________________
   (Examples: "corporate planner," "student")

4. What Pattern was observed? (give complete, accurate name)

   ____
   (Example: "Primary Nuclear Family")

ADVENT FORM I: Observation Report Form, Page 2

5. Why are you interested in this Pattern?
(25 words or less)

____

____

____

6. What do you hope to gain by your observation?
(25 words or less)

____

____

____

7. What Time-Interval was considered in making your observation?

____
(Examples: "past ten years," "today,")

8. What Environments were considered, and what scope or boundary was fixed for each?

Env. A.______________________________________

Scope______________________________________

Env. B.______________________________________

Scope______________________________________

Env. C.______________________________________

Scope______________________________________

(continued on page ___)

Example:

Env. X : "Economic" Scope: "U.S."

ADVENT FORM I: Observation Report Form, Page 3

9. What are the Key Elements in this Pattern?
For each one, what are its Key Attributes?
Its Key Relations?

Key Element A ____________________
(Primary Nuclear Family example:"Mother")

Key Attributes: a. ____________________

b. ____________________

c. ____________________
(Example for Mother: "Age," "Race")

Key Relations: a. ____________________

b. ____________________

c. ____________________
(Example for Mother:"To husband")

Key Element B ____________________

Key Attributes: a. ____________________

b. ____________________

c. ____________________

Key Relations: a. ____________________

b. ____________________

c. ____________________

Key Element C ____________________

Key Attributes: a. ____________________

b. ____________________

c. ____________________

Key Relations: a. ____________________

b. ____________________

c. ____________________

(continued on page___)

ADVENT FORM I: Observation Report Form, Page 4

10. What are the Key Pattern/Environment Interfaces?

Between Pattern and: a.______________________________

b.______________________________

c.______________________________

(Examples for Primary Nuclear Family:
a."to social traditions"
b."to employment structure"
c."domestic relations laws")

(continued on page ___)

11. What are the Pattern's Key Environmental Resources?

K.E.R. a.______________________________

b.______________________________

c.______________________________

12. What are the Pattern's Key Environmental Constraints?

K.E.C. a.______________________________

b.______________________________

c.______________________________

(continued on page ___)

13. In the remaining space below, make your own Summary Evaluation of your Observation. How complete was it? How accurate? What was omitted? How might it have been extended or improved?

ADVENT FORM II:

FORECAST REPORT FORM

Page 1

General Instructions:

1. Before this Form can be used, an ADVENT Form I (Observation Report Form) must be completed.
2. All items must be completed, but may be completed in any order.
3. This Form is only a basic outline. Make your Forecast as complete and detailed as you can. Use as many extra pages as you need to. Number each extra page, and indicate page numbers in the appropriate spaces provided on this Form.)

Item Number:

1. This Forecast begun (day, month, year):

   ____

   and completed:

   ____

2. Forecaster's full name: ______________

   Street ______________ City ________

   State __________ ZIP ____ Phone ________

3. Forecaster is a: ______________
   (Examples: "corporate planner," "student")

4. What Pattern was Forecast made for? (give complete, accurate name)

   ____
   (Example: "Primary Nuclear Family")

ADVENT FORM II: Forecast Report Form, Page 2

5. Why did you make a Forecast for this Pattern?

____

____

____

(continued on page ___)

6. What do you hope to gain by your Forecast?

____

____

____

(continued on page ___)

7. What future Time-Interval was considered in making your Forecast?

____

(Examples: "next ten years," "this year")

8. What Environments were considered, and what scope or boundary was fixed for each?

Env. A.____________________________________

Scope__________________________________

Env. B.____________________________________

Scope__________________________________

Env. C.____________________________________

Scope__________________________________

(continued on page ___)

Example:

Env. X: "Political" Scope: "My home state"

ADVENT FORM II: Forecast Report Form, Page 3

9. Is this a: NON-Prescriptive Forecast?____

Prescriptive Forecast?____

(Check ONE. If you are uncertain about the difference, please consult Learning Module Two.)

10. Do you forecast that this Pattern will endure until the most distant Time-Point you cited in Item 7 above? Explain your Forecast, and cite pertinent information sources:

YES ___ NO ___ UNCERTAIN ___

____

____

____

(continued on page ___)

11. Look back to the Observation Form (FORM I), Item 9, in which you listed the Key Elements for this Pattern. Of those you listed, which do you forecast will no longer be Key Elements as of the most distant Time-Point you cited in Item 7 above? Explain your Forecast, and cite pertinent information sources.

K.E. A.____________________________________

B.____________________________________

C.____________________________________

____

____

____

(continued on page ___)

12. Look again at Form I, Item 9. Of the Key Elements you listed there for this Pattern, which ones do you forecast WILL STILL BE Key Elements as of the most distant Time-Point you cited in Item 7 above? Explain your Forecast, and cite pertinent information sources.

K.E. A. ______________________________

B. ______________________________

C. ______________________________

____

____

____

(continued on page ___)

13. Looking at Item 12 above, consider the Key Attributes for every Key Element listed there. Then in the spaces below make your Forecast for each Key Element, indicating which will no longer be Key Attributes as of the most distant Time-Point you cited in Item 7 above. Explain your Forecast, and cite pertinent information sources.

K.E. A. ______________________________

Displaced Key Attributes.
a. ______________________________
b. ______________________________
c. ______________________________

K.E. B. ______________________________

Displaced Key Attributes.
a. ______________________________
b. ______________________________
c. ______________________________

ADVENT FORM II: Forecast Report Form, Page 5

13. (continued)

K.E. C. ____________________

Displaced Key Attributes.
a. ____________________
b. ____________________
c. ____________________

____

____

____

(continued on page ___)

14. Look once more at Item 12 above. Consider for every Key Element listed there, what new Key Attributes will have emerged as of the most distant Time-Point you cited in Item 7 above. Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

K.E. A. ____________________

New Key Attributes.
a. ____________________
b. ____________________
c. ____________________

K.E. B. ____________________

New Key Attributes.
a. ____________________
b. ____________________
c. ____________________

K.E. B. ____________________

New Key Attributes.
a. ____________________
b. ____________________
c. ____________________

14. (continued)

K.E. C. ______________________________

New a. ______________________________

Key b. ______________________________

Attri-

butes. c. ______________________________

____

____

____

(continued on page ___)

15. Look once more at Item 12 above. Consider for every Key Element listed there, which Key Relations will be displaced as of the most distant Time-Point you cited in Item 7 above. Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

K.E. A. ______________________________

Dis- a. ______________________________

placed

Rela- b. ______________________________

tions.

c. ______________________________

K.E. B. ______________________________

Dis- a. ______________________________

placed

b. ______________________________

Rela-

tions. c. ______________________________

K.E. C. ______________________________

Dis- a. ______________________________

placed

b. ______________________________

Rela-

tions. c. ______________________________

15. (continued)

____

____

____

(continued on page ___)

16. Look once more at Item 12 above. Consider for every Key Element listed there, what new Key Relations will have emerged as of the most distant Time-Point you cited in Item 7 above. Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

K.E. A. ________________________________

New a. ________________________________

Key b. ________________________________
Relations. c. ________________________________

K.E. B. ________________________________

New a. ________________________________

Key b. ________________________________
Relations. c. ________________________________

K.E. C. ________________________________

New a. ________________________________

Key b. ________________________________
Relations. c. ________________________________

____

____

____

(continued on page ___)

17. Considering this Pattern as a whole, what new Key Elements do you forecast will emerge as of the most distant Time-Point you cited in Item 7 above? And what will be the Key Attributes and the Key Relations of each of these new Key Elements? Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

New Key Element 1. ______________________________

Its Key Attributes.
a. ______________________________
b. ______________________________
c. ______________________________

Its Key Relations.
a. ______________________________
b. ______________________________
c. ______________________________

New Key Element 2. ______________________________

Its Key Attributes.
a. ______________________________
b. ______________________________
c. ______________________________

Its Key Relations.
a. ______________________________
b. ______________________________
c. ______________________________

New Key Element 3. ______________________________

Its Key Attributes.
a. ______________________________
b. ______________________________
c. ______________________________

17. (continued)

New Key Element (continued) 3. ______________________________

Its Key Relations.
a. ____________________________
b. ____________________________
c. ____________________________

____

____

____

(continued on page ___)

18. Now, look back to the Observation Form (FORM I, Item 10, in which you listed this Pattern's Key Pattern/Environment Interfaces. Of the Interfaces listed there, which ones do you forecast will no longer be Key Interfaces as of the most distant Time-Point you cited in Item 7 above? Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

Displaced Key Pattern/Environment Interfaces:

1. ____
2. ____
3. ____

____

____

____

(continued on page ___)

19. Next, what new Key Pattern/Environment Interfaces do you forecast will emerge for this Pattern as of the most distant Time-Point you cited in Item 7 above? Make your forecast in the spaces provided below, then explain it and cite pertinent information sources.

    NEW Key Pattern/Environment Interfaces:

    1. ______________________________
    2. ______________________________
    3. ______________________________

(continued on page ___)

20. Now, look back to the Observation Form (FORM I, Item 11, in which you listed this Pattern's Key Environmental Resources. Of the Resources you listed, which do you forecast will no longer be Key Environmental Resources as of the most distant Time-Point you cited in Item 7 above? Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

    Displaced Key Environmental Resources:

    1. ______________________________
    2. ______________________________
    3. ______________________________

(continued on page ___)

21. Next, what new Key Environmental Resources do you forecast will emerge for this Pattern as of the most distant Time-Point you cited in Item 7 above? Make your forecast in the spaces provided below, then explain it, and cite pertinent information sources.

New Key Environmental Resources:

1.____

2.____

3.____

____

____

____

(continued on page ___)

22. Now, look back to the Observation Form (FORM I), Item 12, in which you listed this Pattern's Key Environmental Constraints. Of the Constraints you listed, which do you forecast will no longer be Constraints as of the most distant Time-Point you cited in Item 7 above? Make your Forecast in the spaces cited below, then explain it and cite pertinent information sources.

Key Environmental Constraints Removed:

1.____

2.____

3.____

____

____

____

(continued on page ___)

23. Next, what new Key Environmental Constraints do you forecast will emerge for this Pattern as of the most distant Time-Point you cited in Item 7 above? Make your forecast in the spaces provided below, then explain it, and cite pertinent information sources.

New Key Environmental Constraints:

1. ____

2. ____

3. ____

____

____

____

24. As an ADVENT Forecaster, you have just made a series of 14 separate forecasts about the Pattern you named in Item 4 above. Now in the spaces provided below, please estimate how much confidence you have in your own forecasts.

Use this rating scale:
1 = LITTLE CONFIDENCE
2 = SOME CONFIDENCE
3 = GREAT CONFIDENCE

Item	Rating	Item	Rating	OVERALL RATING
10	_____	17	_____	
11	_____	18	_____	
12	_____	19	_____	
13	_____	20	_____	_______
14	_____	21	_____	
15	_____	22	_____	
16	_____	23	_____	

Objectives:

1. To suggest that the nature of Time is not understood.
2. To present a linear-notation model of Time in which Time is defined by events and in turn is used to interrelate events.
3. To discuss three concepts of "future time" in terms of the model.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. No one actually knows what "Time" is--or even if that is a meaningful question to be raised. The mystery persists at two levels: (1) at the level of philosophy and physics, and (2) at the level of our own everday lives.

2. The word "now" or the phrase "the present" as we ordinarily use it may refer to nearly any time interval at all--from"this instant" to "in our time."

3. In order to think about alternative futures and to discuss our thoughts clearly with others, we require some reasonably clear and consistent--if arbitrary--model or notation system for Time. The model offered in this curriculum is The Time-Line.

4. The Time-Line actually is a line segment--that is, the Time-Line refers only to any finite or bounded time-interval we choose to consider.

5. The Time-Line has its "beginning" at its left end point and its "end" at its right end point. These terms refer to whatever "event" we may select to define the Time-Line. A class period is an example of an "event" which defines a Time-Line--often a Time-Line whose duration is 60 minutes.

6. Within the Time-Line of every event, each participant in the event has an internal, psychological awareness of "this instant." In the Time-Line model, this internal awareness is called Time-Point *P*. At any given Time-Point *P*, the "past" is that portion of the event which *preceded* Time-Point *P*, while the "future" is that portion of the event which will *succeed* Time-Point *P*. /LM3/

7. Two or more events may be temporally related to each other through a broader or longer Master Time-Line encompassing both events. Calendars are Master Time-Lines based on historic events (e.g., the Birth of Christ) through which many events may be located along the Time-Line relative to each other.

8. The "beginning" of an event defining a Time-Line is always treated as fixed and known, e.g. one's birth date. The "end" of an event is always treated as fixed but may or may not be known, e.g., the certainty of one's death but the uncertainty of one's actual date of death. Time-Point *P*, the fleeting internal sense of the instant is always treated as a moving point which travels along the Time-Line away from the "beginning" toward the "end."

9. Time-Point *P*, is a psychological sense of the instant and, as such, has no objectively measurable duration. However, the subjective events which often define for us significant Time-Lines *do* have objectively measurable duration--e.g. such events as "eating this meal," "watching this movie," etc. Thus we need some different term to signify subjective events subjectively thought of as "now" which have a measurable duration. In the Time-Line model, such events are thought of as occupying a Time-Interval *N*.

10. Because events defining Time-Interval *N* *are* subjective, Time-Interval *N* has no absolute or fixed duration. Time-Interval *N* may have such variable durations as "this airplane flight," "what I am doing today," or "walking from here to there." Such events may be thought of as defining a series of different "Actual Nows". The duration of Actual Now is subjective and highly variable, thus Time-Interval *N* also may vary greatly from one situation to another, or from one location to another along the Time-Line of an event.

/LM3/

11. Time-Point *P*--that fleeting internal, unmeasurable awareness of the instant--may or may not be identified in relation to Time-Interval *N*, the *Actual Now*. When Time-Point *P* is identified, however, *it always* is located somewhere within Time-Interval *N* and always travels from the "beginning" of Time-Interval *N* towards the "end" of Time-Interval *N*.

12. When Time-Point *P* is identified within Time-Interval *N*, it will be seen that a part of any Time-Interval *N*--*Actual Now*--actually is a part of "the past" while another part of the *Actual Now* in question actually is a part of "the future." *However*, when Time-Point *P* is *not* identified, every time-point within Time-Interval *N* is equally a part of "now" and *no* time-point within Time-Interval *N* falls within *either* "the past" or "the future."

13. Turning from "the present" to "the future", the Time-Line enables us to identify three separate aspects of future time: the *actual* future, the *post-actual* future, and the *relative* future.

14. Since the Time-Line must always be defined in terms of some event, at any given time-point during the course of that event the *uncompleted segment* of the event defines the *actual future of that* event--that is, the portion of the event which will occur between Time-Point *P* or Time-Interval *N* and the completion of the event.

15. Because the Time-Line is defined in terms of some event, all time-intervals which will not occur until the event in question has been completed must occur in the *post-actual* future of that event. (Example: If the event defining a Time-Line is one's own lifetime, any event or time-interval which will occur only after one's own death lies in one's *post-actual* future).

16. Both the *actual* future and the *post-actual* future are defined in relation to some Time-Point *P* or some Time-Interval *N*--that is, in relation to some *Actual Now.* Often, however, we think and speak of future time as measured from some time-point or time-interval *other* than the *Actual Now*. (Example: If we reflect "how things might have turned out differently" had we taken a different course at some point in the actual past, we are speculating about an alternative (not actual) future as viewed from some time-point in the past. Similarly, we may speculate about events in a distant future which are contingent on earlier events in the nearer future.

In both cases, we are thinking about the future from the perspective of a time-point other than the Actual Now. Future time so considered can be thought of as the Relative future). /LM3&4/

Learning Module 4: APPRAISING FUTURES REPORTS

Objectives:

1. To identify and characterize three non-forecast types of futures reports.
2. To define the forecast by its essential characteristics.
3. To identify and discuss the four factors which must be judged in appraising any forecast.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Four basic types of futures reports:

    a. Prophecies and predictions
    b. Projections and speculations
    c. Methods and concepts
    d. Forecasts

2. Prophecies and predictions. Make explicit assertions--often ambiguous--about future developments or events. Usually do not include the information or reasoning on which they are based. Do not indicate likelihood of predicted event's actual occurrence or non-occurrence. May or may not specify time or date of predicted occurrence.

3. Projections and speculations. Draw descriptive inferences about possible future developments or events, based on information about present and assumptions about the direction and rate of change. Do not indicate likelihood of conjectural events' actual occurrence. Probes possible alternative futures by completing a series of "If....then" propositions. (If U.S. population grows at its present rate, then U.S. population will total 240 million by 2000).

4. Methods and concepts. Deal with attitudes, ideas, and research and study methodologies. This curriculum is an example. Are not specifically addressed to any particular topic or issue. Offer no predictions or judgments about future events or developments. Focus on intellectual tools which can be used in preparing any of the other types of futures reports. /LM4/

5. Forecasts. A futures report which:

   a. Treats a clearly specified topic.
   b. Identifies and describes the most significant possible future developments or events pertinent to the topic.
   c. Arranges these possible future developments or events into a set of two or more alternative futures. (At its simplest, this consists of two alternative futures, in one of which a specified development or event does occur, and in the other of which it does not occur).
   d. Specifies the significant circumstances in which an alternative future may be realized as the actual future.
   e. Makes estimates about the chances or probabilities that each alternative future may be realized as the actual future.

6. The definition given above defines the "ideal" or "complete" forecast. Not every forecast will--or even needs to--satisfy each of the characteristics listed. Any forecast may be judged against these criteria, however.

7. The reader or prospective user of a forecast should make a systematic, critical appraisal of the forecast before taking it seriously. A forecast can be appraised from each of four different standpoints:

   a. The forecaster
   b. The forecasting effort
   c. The forecast content
   d. The forecast's utility

8. The forecaster. The following questions should be considered:

   a. Is the forecaster accurately and clearly identified?
   b. Is the forecaster qualified to make this forecast?
   c. Is the forecaster's intent stated clearly and honestly?

9. The forecasting effort. The following questions /LM4/ should be asked:

   a. Is the forecast topic accurately and clearly identified? (1) In its scope--what is included, what is excluded)? (2) Its central issues? and (3) Its time horizon (how far ahead does it look)?
   b. Is the forecasting methodology clearly explained? (1) Which forecasting methods were used, and why? (2) Exactly how was the method(s) applied to this topic?
   c. Was earlier, related work consulted and is it cited?
   d. What basic information sources were consulted and cited?
   e. Is the effort level indicated? (how much work was done).
   f. Are special problems encountered identified and discussed?
   g. Has the forecaster indicated his own confidence level in his forecast?

10. The forecast content. The following questions should be asked:

   a. Is the forecast non-prescriptive or prescriptive? (See LM 2, Point 7a).
   b. If the forecast is prescriptive, what is its purpose?
   c. Is the forecast content consistent with the forecast topic?
   d. Are central forecast issues satisfactorily explored?
   e. Have possible future developments or events been organized into a set of possible alternative futures?
   f. Has each significant alternative future been satisfactorily explored?
   g. Has the forecaster distinguished clearly between what he believes are "facts" and what are his own statements of judgments?
   h. Are the findings and conclusions consistent with and supported by the assumptions, facts, and judgments presented by the forecast?
   i. Has the forecaster stated clearly and defended his own level of confidence in his forecast?

11. The forecast's utility.

   a. The utility of any forecast must be judged by the prospective user in light of his own needs and interests.

b. Any forecast may serve one or more of the following ends: /LM4&5/

1. source of organized, evaluation information about a particular topic
2. provoke personal or group speculation about alternative futures for a topic
3. serve as a demonstration of one or more forecasting methods
4. identify some or all most-probable and least-probable significant alternative futures for a topic
5. serve as a basis for making judgments and decisions
6. serve as a basis for making plans or taking action

Learning Module 5: FUTURES STUDIES METHODS

Objectives:

To identify and briefly discuss six basic methods used in Futures Studies: Authority, Polling, Projection, Qualitative Conjecture, Quantitative Conjecture, and Modeling and Simulation.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. This Learning Module identifies and briefly discusses six basic methods used in studying Alternative Futures. This Module does not attempt to teach the use of such methods.

2. Six basic methods used in studying Alternative Futures are:

   a. Authority Method
   b. Polling Method
   c. Projection Method
   d. Qualitative Conjecture Method
   e. Quantitative Conjecture Method
   f. Modeling and Simulation Method

3. Authority Method. This is the oldest and simplest of all methods used to foresee possible futures. Basically, the method is to select a topic whose futures interest us, select an expert or authority whose foresight on that topic is trustworthy, and ask the authority to give his views. /LM5/

4. Some faults of the Authority Method are:

   a. It may be difficult to decide who is an "authority" on a given topic, e.g. "The American Way," or "Progress."
   b. Equally trustworthy authorities may disagree with each other.
   c. What the "authority" believes should happen may color his estimates about whay may happen.
   d. The "authority" may find it difficult to explain and defend the reasoning behind his opinions.

5. Polling Method. An extension of the Authority Method, except that a group of experts or judges are used, rather than one.

6. Delphi Method as an example of a Polling Method. Developed by Theodore Gordon and Olaf Helmer at RAND Corporation. A topic is selected for forecasting, and a group of experts are recruited. A number of possible developments which would affect the future of the topic are identified. In two or more rounds of polling by mail, the experts are asked to estimate the probability of each possible development's actually occurring. Each expert is also asked to estimate when each possible development may occur, and what its impact on the forecast topic might be. After each round, Delphi managers summarize the panel's estimates, return to each a comparison of his forecasts with the group's average forecasts, and asks each expert to revise or defend his personal forecast in light of the group forecast. All this is done by mail so that more experts may participate and so that no expert's reputation or strength of personality can in itself affect other experts' estimates.

7. Delphi forecasting is only one among many Polling Methods which are used in studying alternative futures. Others which may be used:

   a. Public opinion polls
   b. Permanent panels of experts
   c. Series of essays on one assigned topic
   d. Special issues of periodicals
   e. Special study groups
   f. Special programs and meetings

8. Advantages and disadvantages of Polling Methods. /LM5/

Advantages: An efficient way to gather and organize many facts, estimates, and opinions pertinent to the alternative futures of a topic. Also reveals the nature and extent of agreement and disagreement among those polled, may reveal what is known and not known.

Disadvantages: As in the Authority Method, selection of qualified experts may be difficult. When the poll reveals sharp differences of opinion, whose views are to be accepted? May also be difficult to probe deeper to discover reasons for agreement or disagreement.

9. Projection Method. The projection method requires first of all an accepted description of the present. In population projections, for example, we must begin by knowing what the present population is. Next, we must make some explicit assumptions about future rates of change in present circumstances, as when we assume any given future population growth rate. Finally, we apply our assumptions to our description and arrive at our projection. We can and often do make more than one projection about a topic, each based on different assumptions. The Census Bureau makes five different projections of future U.S. population.

10. While most projections are quantitative, many are qualitative as when we project possible future changes in existing social sentiments, which cannot be counted or measured and so are not quantitative projections.

11. Projections are often confused with forecasts. A projection indicates only what would happen if the stated assumptions held. As such, a projection makes no estimate as to the probability that its assumptions will actually hold true for the future. When such estimates are added to a projection, the projection may then be regarded as a forecast.

12. Advantage and disadvantages of projection method:

Advantage: Facts and assumptions are stated clearly, and the content of the projection usually is definite and explicit.

Disadvantages: A projection often is mistaken for a forecast, either by readers or by the author. Also, it may often be difficult to describe present circumstances and/or assumptions well enough to enable projection. /LM5/

13. Conjecture Method. As used in this curriculum, Conjecture refers to any logical, reasoned, systematic effort to identify and describe possible significant changes pertinent to a forecast topic and to estimate which among these changes may most probably occur.

14. Qualitative Conjecture. Qualitative Conjecture is any Conjecture whose most important content cannot be counted or measured: words, pictures, sounds, music, etc.

15. Quantitative Conjecture. Quantitative Conjecture is any Conjecture whose most important content can be counted or measured: numbers, change rate estimates, probability estimates, percentage changes, numerical scales, graphs, etc. Neither form of Conjecture is either superior or inferior to the other.

16. Two examples of Qualitative Conjecture are the Scenario and the Future History. (The difference between the two was first noted by Michael Marien, Syracuse University). A Scenario is a background narrative which in general terms describe some alternative future on the basis of specified facts and assumptions; the Scenario is limited to a narrative describing some one future time-point. A Future History is similarly a narrative based on specified facts and assumptions. The Future History, however, traces the course of developments and events over a time-interval in order to explain how a particular set of circumstances set forth in a Scenario developed out of preceding sets of circumstances. As in many science fiction stories, Future Histories and Scenarios often are interwoven in a single narrative, but the difference between them should be carefully noted.

17. Two examples of Quantitative Conjecture are the Cross-Impact Matrix and the Logic Tree. The Cross-Impact Matrix is simply a table in which many possible significant future developments and events are doubly arrayed: once in the rows and once in the column. In each intersection, the forecaster (one or in groups) is required to make a numerical estimate of how much each trend affects the others. Purpose of the Cross-Impact Matrix is to identify the most significant interactions for

further study. The Logic Tree is a general name for many similar methods. All such methods involve specifying the possible alternative outcomes for any given event, then proceeding to treat each such outcome as a separate subsequent event. /LM5/

18. Advantages and Disadvantages of Conjecture Methods.

Advantages: Incomplete or inconsistent assumptions and items of information are apt to be identified. May provide broader, deeper treatment than other methods.

Disadvantages: May require a prohibitive effort for satisfactory treatment. May be too complex or effort-consuming for adequate evaluation by users. May--especially in qualitative forms--convey a misleading sense of "reality."

19. Modeling and Simulation Method. A model is any greatly simplified replica of an object or phenomenon. For example, the game Monopoly is a greatly simplified replica of the real estate development field; only a few essential features are kept. Relative to its original, any model is compact and so inexpensive to make and easy to manipulate.

20. Models may be either static or dynamic. A static model is one whose parts or elements cannot be varied with respect to each other. For example, a carved statue of a human figure is a static model. A dynamic model is one whose parts or elements can be varied with respect to each other. For example, the cars, wheels, and whistle of a model train.

21. Models may be physical or abstract. The statue and model train mentioned above are physical models. The organization chart of a corporation is an abstract model.

22. Any dynamic model may be manipulated to discover how the model will perform under a variety of circumstances. For example, players may manipulate the pieces of the Monopoly game. Such manipulation of a dynamic model is called simulation. In playing Monopoly, players are engaging in a dynamic simulation of the real estate development field.

23. Models used for dynamic simulation can be used to study alternative futures. For example, we could develop a Monopoly-like game to model either an

imaginary or an actual corporation. Then we could specify significant possible future developments or events which would affect the corporation and see how the players of the game might behave in such alternative futures. /LM5&6/

24. Advantages and Disadvantages of Modeling and Simulation.

Advantages: Enable us to explore quickly many alternative futures for complex topics. Help us learn more about the nature of the topic in trying to simulate it.

Disadvantages: Models may often require more knowledge, time, and effort to develop and test than is available. Results may not be easily understood or credible to those not intimately involved with design and development of the model. Insufficient or incorrect design decisions may yield inadequate or deceptive results.

Learning Module 6: CHANGE

Objectives:

1. To contrast Qualitative Change with Quantiative Change.
2. To identify three typical standards by which Change Rates may be measured.
3. To identify five basic Change Rates often encountered.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Two basic kinds of Change can be identified: Quantitative Change and Qualitative Change.

2. Quantitative Change is any kind of change which can be counted, measured or described in quantitative terms. (Examples: changes in income (in dollars); changes in population (in numbers of people); changes in temperature (in degrees)).

3. Qualitative Change is any kind of change which cannot be counted, measured or described in

quantitative terms. (Examples: change in affection; change in beliefs; change in perception). /LM6/

4. Sometimes, a quantitative change may cause or be accompanied by a qualitative change. (Examples: A large income change may result in a lifestyle change. A large population change may result in political or cultural changes. A large temperature change may result in behavioral changes).

5. Sometimes, a qualitative change may cause or be accompanied by a quantitative change. (Examples: a change in affection may affect movement patterns or allocation of time. A change in beliefs may affect church donations. A change in perception may affect purchasing habits).

6. Every Change must occur at some rate. Change Rate simply refers to the speed at which one set of characteristics or circumstances is transformed into another.

7. In attempting to observe or measure Change Rates, some Comparison Standard is required. That is, the observer must decide that the Change observed is occurring slowly or rapidly as compared with something else.

8. Many different Comparison Standards may be used in measuring Change Rates. Three typical Comparison Standards are given here, for purposes of illustration.

9. One Comparison Standard which can be used in measuring Change Rates is the estimated capacity to change. (Examples: If the Change observed involves the water level in a river, Change Rates can be measured or expressed in terms of how much the river can hold. If the Change involves resource depletion, Change Rates can be expressed in terms of how much of a resource is left to deplete).

10. A second Comparison Standard which can be used in measuring Change Rates is to compare changes at one location with changes elsewhere. (Examples: If the change observed involves the growth of a child, his growth can be compared with the growth of one or more children his age. If the change observed involves income, any given family's income changes can be compared with average family income changes).

11. A third Comparison Standard which can be used in measuring Change Rates is to compare present Change Rates against past Change Rates. (Example: If

the change observed involves urban population growth, we can compare the amount of time required to attain the most recent million additional population with the amount of time required to attain the second most recent million. If the change observed involves solid waste disposal, we can compare the increased amount of garbage this year with the increased amount for last year). /LM6/

12. Because Change Rates are always expressed in terms of a Comparison Standard, it is important to decide in each case what the most valid Comparison Standard is. The apparent Change Rate may vary greatly depending on the Comparison Standard used.

13. Often Change Rates occur in definite patterns, over time. Among many distinctive Change Rates, five commonly encountered are:

    a. Zero Change
    b. Step Change
    c. Linear Change
    d. Exponential Change
    e. Asymptotic Change

14. Zero Change refers simply to the absence of change. That is, a given condition at one time-point is identical with that at another time-point. (Examples: There is Zero Change over time in the amount of water (all forms) available in the Earth and its atmosphere. There is Zero Change in the measured length of one foot from one time to another).

15. Step Change refers to a sudden change occurring at a single time-point. (Examples: There is a Step Change in illumination levels when a lamp is switched on in a dark room. There is a Step Change in spatial relations when someone who is "inside" goes "outside.").

16. Linear Change refers to the case in which the amount of change occurring in Time-Interval 1 is identical with the amount of change occurring in the next Time-Interval, Time-Interval 2. (Examples: People get exactly one year older each and every year. When driving at a fixed speed, the distance travelled in one hour is exactly the same as the distance travelled in the next hour).

17. Exponential Change refers to the case in which the amount of change occurring in Time-Interval 1 is smaller or larger by some multiplier than the

amount of change occurring in the next Time-Interval, Time-Interval 2. (Examples: If one cell divides in T1, each half divides into two more in T2, and each quarter divides into two more, exponential change is occurring with a multiplier (exponent) of two. If one person tells four others a bit of gossip in T1, each of those tells four others the gossip in T2, and each of those tells four others in T3, exponential change (in the number of persons who have heard) is occurring with a multiplier (exponent) of four).

18. Asymptotic Change refers to the case in which change first occurs very rapidly and then more slowly, approaching zero change as it loses its capacity for further changes. (See Point 9 above). (Examples: An infant grows very rapidly but grows much more slowly as he approaches maturity, after which his height (at least) never increases. The first few people at a party are able to move about easily, but the ability of anyone to move at all falls off rapidly as the party room becomes filled with people).

Learning Module 7: ALTERNATIVE FUTURES

Objectives:

1. To present the basic concept of alternative futures.
2. To discuss some basic relations among different alternative futures.
3. To discuss some practical considerations about alternative futures which the forecaster must take into account.

Presentation Time:

About one hour, plus time for questions and discussions.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In considering possible futures for any topic, many different possible developments and events must be considered.

2. Each separate possible development or event may have any of the following relations with any or all others:

a. Mutually inclusive. (If one event occurs, the other must. (Example: If I marry you, you will marry me). /LM7/

b. Mutually exclusive. If one event occurs, the other cannot. (Example: If a tossed coin comes up heads, it cannot come up tails).

c. Dependent (The outcome of one event determines the outcome of the other. (Example: If I am to eat dinner this evening, then dinner must be prepared before mealtime).

d. Independent (The outcome of one event is not determined by the outcome of the other. (Example: The plane will leave whether or not I reach the airport by departure time).

3. Individual possible significant developments or events each have a unique set of such relations with all other possible significant developments or events. Taken singly--in turn--each such set of relations represents one alternative future. The number of such individual alternative futures is usually very large, and often for practical purposes is infinite.

4. Forecasters, however, usually do not consider each separate possible development or event in isolation from the others. Rather, the forecaster usually identifies one or a few sets of the most probable and most significant developments and events. The forecast is then organized around this set or these sets as a whole (Example: Population forecasts usually are based on the following set of developments and events: (1) birth rates, (2) death rates, (3) migration rates).

5. In dealing with an entire set of possible significant developments or events, the forecaster must sort out the basic relations of each member of the set to the others, as listed in Point 2 above. This procedure in effect generates a set of alternative futures. That is, under certain circumstances some possible developments and events must occur, others cannot occur, and still others may or may not occur. As different circumstances are considered, the groupings of developments and events will shift. Each different set of circumstances thus generates a different alternative future.

6. Even when dealing with sets of possible significant developments and events--rather than with individual ones--the number of possible alternative futures which could be considered often is too large for the forecaster to manage. Often, therefore, the forecaster must decide which alternative futures to consider and which to ignore. /LM77

7. Some practical guidelines which the forecaster may use in deciding which alternative futures to consider and which to ignore are as follows:

    a. These alternative futures in which the greatest number of possible significant developments or events are included should be considered first.

    b. Those alternative futures in which the extent or impact of change or difference (compared with the present) is most should be considered next.

    c. Those alternative futures in which the effect of each single development or event is greatest should be considered next.

    d. This procedure can be used to explore the range or variety of possible alternative futures. On this basis, the forecaster can then decide which alternative futures within this range most deserve his attention.

8. Many times, different alternative futures may be somewhat interchangeable. (Example: Any given future U.S. population total may be reached by many different combinations of birth rates, death rates, and migration rates. In making his forecast, the forecaster must decide if he is most interested only in the end result or if he must also consider alternative routes to the same end result).

9. The screening procedure outlined in Point 7 above--combined with the point made in Point 8 above--suggests two different bases for selecting alternative futures to probe out ofa much larger set of alternative futures which might be studied:

    a. The forecaster may concentrate his attention on the most probable alternative futures. These are those which could be attained by the greatest number of different routes, as in Point 8 above.

b. The forecaster instead may concentrate his attention on what he judges to be the *most significant* alternative futures, regardless of how probable they may be. While the criterion for significance will vary from forecaster to forecaster, often the forecaster will judge most significant those alternative futures which are *least like the present.* /LM7&8/

c. Combinations of (a)and (b)--especially alternative futures which are judged to be *both* most probable *and* most significant--are often presented in forecasts.

10. Because the number of possible alternative futures is usually so much larger than the number which can be explored, a forecast may omit or under-emphasize one or more extremely important alternative futures. Such forecast omissions or distortions most often arise from:

    a. Too narrow or too rigid a definition of forecast topic.

    b. A foreshortened forecasting time horizon, which misses crucial developments which may be expected immediately beyond the period covered by the forecast.

11. Every forecast is limited because what might be done is infinite while resources are not. This limit is clearly revealed in deciding how many--and which ones--alternative futures are to be investigated. The greater the number and variety of alternative futures considered, the better the forecast may be, but the greater is the effort required. One practical middle ground is to explore at least a few extremely different and contrastive alternative futures so that the "range" of possibilities is somewhat clearer. Then alternative futures in the "middle ground" may be explored in greater detail.

Learning Module 8: FORECASTABILITY

Objectives:

1. To present a basic definition of Forecastability.
2. To identify and discuss four basic factors which determine Forecastability limits for any forecast topic.

Presentation Time:

About one hour, plus time for questions and discussions.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. As discussed in Learning Module 4 (Point 5), a Forecast is a type of futures report which:
    a. Treats a clearly specified topic.
    b. Identifies and describes the most significant possible future developments or events pertinent to the topic.
    c. Arranges these possible future developments or events into a set of two more more alternative futures.
    d. Specifies the significant circumstances in which an alternative future may be realized as the actual future.
    e. Makes estimates about the chances or probabilities that each alternative future may be realized as the actual future.

2. Forecastability. Given the above definition of a forecast, Forecastability refers to the scope and limits within which the five tasks identified above can be completed for any given forecast topic.

3. The forecastability of any given topic is determined by four factors:
    a. Continuities (nature, extent)
    b. Discontinuities (nature, extent)
    c. Scheduling and Timing (nature and extent of errors)
    d. Manageability (nature, extent)

4. Continuities.
    a. Continuity in a forecast topic refers to:
        (1) any perceived relations between or among separate aspects of a topic. (Example: Employment and Income are two directly related aspects of the topic, Economy).
        (2) any perceived relations between a topic and other topics. (Example: Technology

(TopicA) is directly related to Science (Topic B) and to Invention (Topic C).

b. A continuity may be physical (adjoining houses on a street), temporal (identical clock time within any Time Zone), cultural (we are all Americans), etc.

c. A continuity tends to persist. (Examples: The house which is next door today probably will be there tomorrow. All cities in a given Time Zone this year will probably remain in that same Time Zone next year. Any person or group which is American now probably will be American ten years hence).

d. Because continuities tend to persist, they constitute a fundamental basis of forecastability.

e. The "most probable forecast" usually is as follows: "The future will be more like the present than otherwise." Actually, this is not a forecast but a projection (See Learning Module 4, Point 3). That is, such a "forecast" actually makes a simple extension of existing trends or circumstances without considering why things are as they are or why they might be different hereafter.

f. Nonetheless, accepting projections as forecast--which we can do, of course, if we choose--is one of the most common ways of making a forecast, even though it does not satisfy the "ideal forecast" definition given above (Point 1). In such cases, the forecast is based almost entirely on the principle of Continuity.

5. Discontinuities.

a. Discontinuity in a forecast topic refers to:

(1) Any significant shift (often sudden or unexpected) in perceived relations between or among separate aspects of a topic. (Example: Betrayal by "friend").

(2) Any significant shift (often sudden or unexpected) in perceived relations between a topic and other topics. (Example: A switch by a Republican Senator (Topic A) to the Democratic Party (Topic B). Any "surprise" is a discontinuity.

b. Because discontinuities tend to be sudden, significant, and often unexpected changes in continuities, discontinuities impose limits on forecasts since forecasts tend to be based on projected continuities. /LM8/

c. A continuity forecast does not require a detailed understanding of a topic. It can state merely: "However things are now, that's how they will be later. On the other hand, a discontinuity forecast cannot be made so simply. In a discontinuity forecast, the forecaster must:

(1) Identify existing significant discontinuities.
(2) Decide how these could change.
(3) Decide which continuity changes would be significant.
(4) Decide under what circumstances discontinuity might occur.
(5) Estimate probabilities for occurrence of each possible significant discontinuity.

6. Scheduling and Timing.

a. Scheduling: Making an estimate either of when or of the circumstances in which a possible future development or event might occur.

b. Every valid forecast must include a schedule.

c. Forecast schedules require the following estimates:

(1) What is the present rate of change for each significant factor?
(2) Which change rates will remain continuous and which will be disrupted by discontinuities?
(3) When may discontinuities be expected?
(4) How rapidly will other change rates respond to discontinuities in any given change rate?
(5) How much confidence can be placed in estimates (1) through (4) preceding?

7. Manageability.

a. Manageability: The capacity of the forecaster (or of someone else, in the judgment of the forecaster) to actualize particular alternative futures from among all possible alternative futures. (Note: Futures Manageability is discussed in detail in Learning Module 12).

b. The forecastability of any topic decreases as its estimated future manageability increases. Why? If a topic is thought to be totally unmanageable, the forecaster need only estimate what could happen. (Example: What are the chances of rain tomorrow?) If a topic is seen as manageable, however, the forecaster must estimate both what could happen and what someone will choose to make happen. (Example: If rainfall were perfectly controllable through human intervention, the forecaster would be required to estimate both the chances of "unassisted" rainfall and the social/political/economic battles between those who would prefer rain tomorrow and those who would not). /LM8/

c. Estimating the future manageability of any forecast topic often is very difficult. It requires estimates or knowledge of:

(1) How future control might be achieved.
(2) Outcomes of future struggles about ways and means of using control when it becomes available.

d. Because forecasting manageability is so difficult and uncertain, forecast estimates on this subject may vary greatly from:

(1) one forecaster to another
(2) one forecast topic to another
(3) one time period to another

wherever it is relevant, futures manageability imposes severe limits on the forecastability of a topic.

8. Conclusion.

a. No development or event is certain until it has actually occurred. For that reason, every forecast is an estimate and as such is subject to error. That is, no topic is ever completely forecastable.

b. The forecastability of a topic may be limited by any or all of the following types of forecast errors:

(1) Topical errors. (Example: A forecast devoted to "work" which did not provide an explicit definition of the term would be subject to serious topical errors). /LM8/

(2) Content errors. (Example: A forecast of future employment based on incorrect or incomplete figures about present employment would be subject to serious content errors).

(3) Scheduling errors. (Example: A forecast of future economic growth which seriously misestimated growth rates would be subject to serious scheduling errors in estimating when a particular GNP might be achieved).

(4) Scope/scale errors. (Example: A 1940 forecast of U.S. television which assumed that few people would ever buy TV sets would have made a serious scope/scale error).

(5) Manageability errors. (Example: A medical forecast which assumes that extensive transplant of artifical organs will never be possible probably would be subject to serious manageability errors).

c. The gravity of forecastability limits imposed by such errors depends on the nature of the forecast topic, what investments or risks are to be based on the forecast, and how much other information is available from other forecasts.

d. Perhaps the most dangerous limit on forecastability is the limit imposed by credible errors. (Example: A distinguished American scientist flatly denied that powered manned flight would ever be possible--only a few months before the Wright Brothers flew. At that time, most people found his forecast credible while few either knew of the Wright Brothers work--or would have held it credible had they known of it).

Learning Module 9: CONFIDENCE IN FORECASTS /LM9/

Objectives:

1. To identify the six factors which must be considered in estimating how much confidence should be placed in any forecast.
2. To discuss each of the six factors.

Presentation Time:

About one hour, plus time for questions and discussions.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. As discussed in Learning Module 4 (Point 5), a forecast is a type of futures report which:

    a. Treats a clearly specified topic.
    b. Identifies and describes the most significant possible future developments or events pertinent to the topic.
    c. Arranges these possible future developments or events into a set of two or more alternative futures.
    d. Specifies the significant circumstances in which an alternative future may be realized as the actual future.
    e. Makes estimates about the chances or probabilities that each alternative future may be realized as the actual future.

2. No possible future development or event is certain until it has actually occurred. Thus one can never have complete confidence in any forecast. The extent of confidence placed in any forecast is always a relative matter, in which six factors must be considered:

    a. Nature of forecast topic.
    b. Adequacy of forecast topic description.
    c. Forecasting time horizon used.
    d. Forecaster's qualifications.
    e. Forecasting methods used.
    f. Use made of relevant information.

3. Nature of forecast topic.

a. Every forecast topic includes certain elements most critical to the forecast. (Example: In population forecasts, the most critical elements are Birth Rates, Death Rates, and Migration Rates). /LM9/

b. In some cases, critical elements tend to exhibit continuity or persistence. (Example: Death Rates tend to change slowly if at all). In other cases, critical elements tend to exhibit discontinuity or rapid shifts. (Example: Changes in ladies fashions).

c. When all or most forecast topic critical elements are continuous, forecast errors are minimized and greater confidence can be placed in the forecast. When all or most forecast topic critical elements are discontinuous, forecast errors are maximized and less confidence can be placed in the forecast.

4. Adequacy of forecast topic description.

a. The scope (what is considered) of any forecast topic may range from very narrow and specific to very broad and general.

b. When the forecast topic description is general and non-specific:

(1) Confidence in the forecast may increase. (Example: "The world will endure.").

(2) But the significance or utility of the forecast may decrease. (Example: "The world will endure but will my world?").

c. When the forecast topic description is narrow and specific:

(1) Significance or utility of the forecast may increase. (Example: "What I expect to get done next week.").

(2) But confidence in the forecast may decrease. (Example: "Who knows exactly what will happen next week?").

d. The forecaster or forecast user must decide for himself what is the best trade-off between confidence and significance in a particular forecast.

5. Forecasting time horizon used. /LM9/

   a. A forecast treats a number of different possible developments or events which may occur in futures.

   b. Each separate possible development or event has at least two outcomes (It will occur or it will not occur).

   c. Generally speaking, the longer the time period considered, the larger is the number of possible developments, events, and outcomes which must be considered.

   d. The larger is the number of possible developments, events, and outcomes which must be considered, the more numerous are the chances to make errors in forecasting.

   e. Therefore--generally speaking--the further into the future our forecast extends, the more subject to error is the forecast.

   f. Therefore, the further into the future our forecast extends, the less confidence we can place in the forecast.

6. Forecaster's qualifications.

   From the viewpoint of the forecast reader or viewer, the following questions should be raised in deciding how much confidence to place in the forecast:

   a. How much does the forecaster know about the forecast topic?

   b. How experienced is this forecaster in selecting and applying appropriate forecasting methods to this topic?

   c. How knowledgable is the forecaster about pertinent sources of information, and how fully has he consulted these sources?

   d. Are the forecaster's purposes in making this forecast consistent--or at least not in conflict--with my interests in this forecast topic?

7. Forecasting methods used.

Forecasting methods vary significantly (see Learning Module 5). In deciding how much confidence to place in a particular forecast, we must judge how appropriate the methods used are to the forecast topic. This judgment can be made with respect to such factors as: /LM9/

a. What quantity and how much variety in topical elements can be handled by this method?

b. How fully can this method draw on relevant information?

c. How clearly can this method reveal the nature and extent of uncertainties in the forecast?

d. How well can this method deal with "near-in" time horizons versus "far-out" time horizons?

e. How well does this method handle quantitative versus qualitative factors?

8. Use made of relevant information.

For any given forecast topic, both the forecaster and the forecast user will have definite (but often different) knowledge and opinions about what sources of information pertinent to the topic should be consulted. In estimating how much confidence should be placed in a given forecast, we must judge such factors as:

a. What information is relevant to the topic?

b. How much relevant information exists?

c. How much relevant information was known to the forecaster?

d. Of the relevant information known to the forecaster, how much did he consult?

e. Of the relevant information consulted by the forecaster, how much did he use?

f. Of the relevant information used by the forecaster, how and how satisfactorily did he use it?

9. Conclusion. /LM9&10/

Six factors related to the amount of confidence placed in a forecast have been identified and discussed. "Confidence" in a forecast can be resolved into two components: reliability and validity.

a. Reliability: How fully does a forecast's findings and conclusions correspond with (and is supported by) the forecaster's information, assumptions, estimates, and purposes. Confidence in reliability means confidence that what was asserted to be done was done.

b. Validity: How fully does a forecast's findings and conclusions take into account the information, assumptions, estimates, and purposes which the forecast user believes are essential.

c. A forecast's reliability may be judged in terms of its own assertions. A forecast's validity can only be judged with respect to what the forecast user believes is valid. A forecast may be judged reliable but invalid.

Learning Module 10: ATTITUDES TOWARDS FUTURES

Objectives:

1. To identify five basic attitudes towards futures.
2. To suggest that a forecaster's basic attitude may be reflected in his forecasts.
3. To discuss means for determining the forecaster's basic attitude by examining his forecasts.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In forecasting as in all else, our attitudes about alternative futures are inevitably determined by our past experiences, present circumstances, and our feelings and judgments about our experiences and circumstances.

2. *Our judgment as to when the future "begins" may* /LM10/ vary a great deal--from age group to age group, sub-culture to sub-culture, and situation to situation. (Examples: Small children often feel as if "Christmas will never come" while their parents often feel as if "the years just fly by." Adolescents and very poor people (for quite different reasons) may believe that there is no future, only today, while preachers and philosophers may agree that "eternity is all that matters." Overall, there is widespread disagreement as to what is the "short run" and the "long run" and as to which is more important).

3. However it is determined, there are certain rather well-defined emotional postures or attitudes about the future.

   a. Traditionalism ("The future will be much like the present.").
   b. Optimism ("The future will be better than the the present.").
   c. Pessimism ("The future will be worse than the present.").
   d. Pragmatism ("No one can know what the future will be like.").
   e. Fatalism ("The future is predetermined, and no one can change it.").

4. Traditionalism. This is one of the most ancient and formerly most widespread attitudes toward the future. It arose in an historic past when human change in any dimension was experienced very slowly. This attitude is reflected in such sayings as: "You can't change human nature"; "you can't fight city hall"; "as sure as death and taxes"; etc.

5. Optimism. In Western civilization, optimism about the future (on Earth, at least) first arose during the Renaissance, blossomed during the Enlightenment, and reached fullest flower in the American Idea of Progress at the opening of this Century.

6. Pessimism. Pessimism about Earthly futures is inherent in the Christian world, at least from the days of its origins through the Dark and Medieval Ages to the Age of the Reformation. The same pessimistic theme is seen in many Eastern cultures where religion holds the view that the only thing superior to dying young is never to have been born at all.

7. Pragmatism. The term as used technically may not be apt. But this posture towards the future is that no one can foresee what may happen and so the future is not worthy of human consideration. The identification of the future with darkness and blackness--"The unknown future"--expresses this basic attitude. /LM10/

8. Fatalism. Traditional Muslim's believe in "the will of Allah". There is a well-known phrase: "Whatever will be, will be." There is another phrase: "What difference will it make in 100 years?" In various ways, these and other expressions hold to the view that the future is monolithically, eternally predetermined, and that humanity has no capacity whatsoever to influence the actual future in the slightest degree, so that to speculate about the future is a waste of time.

9. Most forecasters--and so, most forecasts--are based on some combination of these basic postures or attitudes towards futures. More often than not, however, the forecaster is honestly unaware of his fundamental attitudes about the future. And so it is important for the forecast reader or user to decide for himself what are the forecaster's basic attitudes about futures, based on the forecast itself.

10. The importance of a forecaster's basic attitudes about the future varies widely in accord with such factors as those suggested by the following questions:

    a. How broadly and deeply aware is the forecaster of his basic attitudes about possible futures?

    b. Is the forecaster engaged in a non-prescriptive or in a prescriptive forecast? (For a discussion of this difference, consult Learning Module 4. Otherwise, think of a "non-prescriptive" forecast as objective and a "prescriptive" forecast as subjective).

    c. How important is the forecaster's basic attitudes about the future in making this particular forecast?

11. A forecast reader or user can seek to determine the forecaster's basic postures and attitudes about the future by considering such questions as:

  a. Which information, assumptions, estimates, and conclusions does the forecaster judge are most important?

  b. Which estimates and conclusions in the forecast are least supported by the information and assumptions offered?

  c. What significant information, assumptions, estimates, and conclusions--if any--have been omitted or under-emphasized?

Learning Module 11: CAUSALITY AND FUTURES

Objectives:

1. To present and discuss the proposition that every forecast is based significantly on the forecaster's assumptions (often implicit or sub-conscious) about cause-effect relations.
2. To identify and discuss five primary cause-effect concepts which are involved in any forecast.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Every forecast makes some critical (if often unstated) assumptions about:

    a. Which are the significant aspects of the forecast topic.

    b. The significant interrelations among significant aspects.

    c. How past developments and events have shaped the present.

    d. How past and present developments and events will or may contribute to future developments and events.

    e. How future developments and events may affect future estimates about the meaning of past and present developments and events.

2. Critical assumptions such as those listed in Point 1 /LM11/ amount to a "theory" or a "model" of causality. That is, the forecaster's assumptions constitute a series of propositions about "What causes what, and how" as well as a series of propositions about "which causes and which effects are important."

3. Some fundamental propositions about causality which are often of critical importance in a forecast are:

   a. What (or which) possible future developments and events can be foreseen, and which cannot?

   b. Of those possible future developments and events which can be foreseen, which actually are foreseen and which are not?

   c. Shall the forecaster's judgment emphasize retrospection (what has happened in the past) or prospection (what may happen in the future)?

   d. In what ways and to what extent shall future developments and events be thought of as manageable? (See LM 12 for discussion of futures manageability).

   e. Which relevant values and priorities are now most important and which will be important in futures?

4. Forecastability versus non-forecastability. Forecastability is discussed in detail in Learning Module 8. Briefly, forecastability may be estimated for a given forecast topic in the following terms:

   a. Nature and extent of continuities. A "continuity" is any significant feature or relation within the forecast topic which can be expected to persist unchanged--or at least to change very slowly--in future time periods.

   b. Nature and extent of discontinuities. A "discontinuity" is any significant feature or relation within the forecast topic which is seen as subject to rapid significant shifts--often sudden or unexpected.

   c. Scheduling and timing. To the extent that a forecast topic involves significant prospects for discontinuities, the forecaster's ability to forecast the scheduling and timing of possible future developments and events is seriously curtailed.

d. Manageability. This limit on forecastability is discussed below and in Learning Module 12. Briefly, to the extent that a topic involves manageable future developments and events the more difficult it is to prepare forecasts for that topic, since human will and intervention must be given careful consideration. /LM11/

5. Nature and extent of actual foresight.

a. As "hindsight" regularly reveals, we seldom foresee all that--in hindsight--we could have foreseen.

b. In a society, individual forecasters collectively foresee much more than society as a whole accepts as credible or important.

c. Any possible future development or event which is foreseen as credible or important can be:

(1) Examined
(2) Debated
(3) Resolved "in principle"
(4) Planned for
(5) To some extent, "managed"

d. Any possible future development or event which is not foreseen as credible or important can be dealt with only on a limited basis, if at all.

e. The forecaster's assumptions about which possible future developments or events will be dealt with must critically affect the content and conclusions of his forecast.

6. Retrospective versus prospective emphasis.

a. Some forecasters regard humanity as being thrust into the future by the past. For them, history and experience are the best clues in speculating about possible futures. They are retrospective forecasters.

b. Some forecasters regard humanity as being pulled toward the future out of the past. For them, human needs and desires are the best clues in speculating about possible futures. They are prospective forecasters.

c. Most forecasters are partly retrospective and partly prospective. For them, what may happen in the future will be determined both by what has happened and by what we want to happen. /LM11/

7. Assumptions about manageability of future. This topic is discussed in detail in Learning Module 12. Briefly:

   a. Generally speaking, all possible alternative futures for a given topic are implied by the question: What can happen?

   b. A forecast tries to narrow down what can happen. The forecast asks: Out of all that can happen, what may happen or what most probably will happen?

   c. Some things which may happen are regarded as possibilities involving human choice or the exercise of human will. These choices may be thought of as two basic types:

      (1) Choosing whether a given development or event will or will not actually occur in future.

      (2) Choosing which among many possible (but mutually exclusive or conflicting) developments or events will be caused to occur.

   d. The forecaster's assumptions and estimates concerning Point (c) above critically affect the forecast's content and findings.

8. Assumptions about values and priorities. This topic is discussed in detail in LM 13. Briefly:

   a. In selecting a forecast topic and in making a forecast, the forecaster--consciously or unconsciously--makes the following assumptions about human values and priorities:

      (1) Which human needs and desires are most important to him.
      (2) Which human needs and desires are most pertinent to his forecast topic.
      (3) What present priorities are among human needs and desires with respect to his forecast topic.
      (4) What future priorities may be among human needs and desires with respect to his forecast topic.

9. Some important causality assumptions in forecasting: A Summary.

    a. In making any forecast, the forecaster must make a series of assumptions--unconsciously if not consciously--about "what causes what" and "which causes and which effects are important."

    b. Some fundamental causality assumptions:

        (1) What factors (causes) impose limits on the forecastability of the topic?
        (2) What factors (causes) will determine which foresights will be accepted as credible and important, and which will not?
        (3) How much emphasis should be placed on the past as the cause of the future, and how much emphasis should be placed on human needs and desires as the cause of the future?
        (4) To what extent should future human ability to manage the future be considered a cause of the future?
        (5) Which human needs and desires--in what priorities--are now pertinent to the forecast topic and which may be in future?

Learning Module 12: MANAGEABILITY OF FUTURES

Objectives:

1. To characterize the concept, "manageability of futures."
2. To discuss the scope and some basic limits of futures manageability.
3. To discuss three basic approaches to futures manageability.
4. To distinguish between authority and power in futures manageability.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. The full set of alternative futures for any forecast topic consists of every possible combination of developments and events which can occur with respect to that topic.

2. Out of the full set of alternative futures, a forecast seeks to identify those which are: /LM12/

   a. most probable, and/or
   b. most significant, given the forecaster's particular interest.

3. Any single development, event, or alternative future (any one combination of developments and events) can be described or classified in many different ways. One way to describe or classify a development, event, or alternative future is in terms of its present or probable future susceptibility to human intervention and control. Some critical considerations in this regard are:

   a. Given our present capacities, could the occurrence or non-occurrence of this development, event, or alternative future be guaranteed or prevented?

   b. Given certain plausible or probable future capacities, could its occurrence or non-occurrence be guaranteed or prevented?

   c. Given our present capacities, could the scheduling or timing of this development, event, or alternative future be controlled?

   d. Given certain plausible or probable future capacities, could its scheduling or timing be controlled?

4. Manageable versus unmanageable futures.

   a. When the answers to the questions raised in Point 3 above are judged to be "No," such developments, events, or alternative futures are held to be unmanageable.

   b. When the answers to the questions in Point 3 above are judged to be "Yes," such developments, events, or alternative futures are held to be manageable.

   c. Mixed replies to the questions raised in Point 3 reflect limited or partial manageability. (Examples: (1) We may be able to guarantee the occurrence or non-occurrence of a development, event, or alternative future without being able to guarantee its timing or scheduling. (2) Given that a development, event or alternative future does occur, we may be able to guarantee its scheduling or timing but not its occurrence. (3) Because our capacities to control given developments, events, or alternative futures may either be enlarged or diminished as time passes, we may be able to guarantee the occurrence, non-occurrence, scheduling and timing of a given development, event, or alternative future: (a) given present capacities, but not with future capacities; and (b) given future capacities, but not with present capacities. /LM12/

5. The capacity to determine--or even merely influence--the occurrence, non-occurrence, or scheduling and timing of any single development, event, or alternative future is one option. Our total array of options with respect to a given topic represents our (or somebody's) capacity to manage the future for that topic. Our capacity to manage the future may vary widely from:

   a. one time period to another
   b. one topic to another
   c. one manager (individual or organization) to another

6. Scope and limits of futures manageability. Some basic factors which help determine the nature and extent of futures manageability with respect to any given topic are:

   a. How narrowly or broadly a topic is defined. The more broadly a topic is defined, the more factors or variables which must be taken into account in trying to manage its futures.

   b. To what extent we desire to manage futures for a topic. Generally speaking, the more intensively we wish to manage futures for a topic, the greater is the effort which must be expended.

   c. Whether we wish to exert futures management over the "short run" or the "long run." Some things (nuclear particle reactions) must be managed in the short run if at all. Other things (religious beliefs) must be managed over the long run if at all. Other things (human development) may be manageable over both the short run and the long run.

7. Three basic approaches to futures management are:

   a. Active futures management
   b. Passive futures management
   c. Mixed-initiative futures management

8. Active futures management. This approach or strategy assumes that the topic to be managed can be directly controlled or manipulated to achieve the alternative future preferred. The approach is akin to "production management" where managers see themselves converting passive "raw materials" into the "end products" desired. /LM12&13/

9. Passive futures management. This approach or strategy assumes that the most probable alternative futures for a topic--in the absence of the manager's control--can be forecast. The manager then seeks to accommodate himself and/or his environment to the forecast future in such a way that his future relation to the topic will be the preferred one. This approach is crudely suggested in the phrase, "If you can't lick 'em, join 'em."

10. Mixed-initiative management. This is perhaps the most flexible and most commonly used approach. It assumes that some aspects of the topic to be managed can be directly controlled, while for other aspects the managers must accommodate themselves or their environment to the topic. An example might be in forest management where some factors can be manipulated directly while others must be left to nature.

11. Authority versus Power in futures management.

    a. Futures management authority refers to the fact that certain persons or groups in any society are given or assume the right to determine what replies shall be given to the questions raised in Point 3 above.

    b. Futures management power refers to the fact that certain persons or groups in any society will have the capacity to determine what replies shall be given to the questions raised in Point 3 above.

    c. Futures management authority and futures management power may reside in different quarters. Political leaders may have the authority to approve space programs but space scientists and technologists have the power to translate such approval into actual programs.

Learning Module 13: VALUES AND FUTURES

Objectives:

1. To stress the fundamental importance of considering human values and value priorities in forecasting alternative futures.

2. To present an extremely simple values model. /LM13/
3. To critique the values model presented, so that the important problems and difficulties of considering value questions in forecasting alternative futures can be appreciated.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In selecting a forecast topic and in making a forecast, the forecaster--consciously or unconsciously--makes some critical assumptions about human values and priorities:

    a. Which human needs and desires are most important to him?

    b. Which human needs and desires are most pertinent to his forecast topic?

    c. What are the present priorities among human needs and desires with respect to his forecast topic?

    d. What may be future priorities among human needs and desires with respect to his forecast topic?

2. Since there is no adequate model or theory of individual or social behavior, there is no adequate model or theory about human "values" and how they change.

3. An extremely simplified human values model is offered here to:

    a. Explore some relations between human values and forecasting.

    b. Emphasize the difficulties encountered in trying to account for human values when making forecasts.

4. The simplified values model offered has five main components:

a. The Valuator.
b. Needs.
c. Desires.
d. Values.
e. Value structures.

5. The Valuator. The person (or group or organization) assigning values pertinent to the forecast topic. Many different--and often conflicting--Valuators often must be considered in making one forecast.

6. Needs. The sum total of resources, processes and relations which the Valuator(s) believe(s) to be essential to his (its) survival or to maintaining present circumstances.

7. Desires. The sum total of resources, processes, and relations which the Valuator(s) believe(s) to be useful in improving his (its) present circumstances.

8. Value. A felt or expressed judgment by a Valuator(s) about the worth of any one resource, process, or relation relative to others in any given set of circumstances.

9. Value structure. A complete set of felt or expressed judgments about the worth of resources, processes, or relations--each relative to all others--in all actual or conceivable sets of circumstances.

10. Needs, Desires, and Values. This simplified Value Model assumes:

a. Valuator can and does make clear and consistent distinctions between his Needs and his Desires at any given time in any given set of circumstances.
b. Needs generate Primary Values
c. Desires generate Secondary Values.
d. Primary Values always have priority over Secondary Values whenever the two conflict.
e. Primary and Secondary Values vary:

(1) From one Valuator to another.
(2) From one Time-Interval to another.
(3) From one set of circumstances to another.

11. Content and organization of Value Structure. It is assumed that Primary Values determine the basic, most enduring content and organization of the Value Structure, while Secondary Values extend or modify the Value Structure as:

a. New Needs are identified (sometimes from among former desires).
b. New Desires are identified.
c. New resources, processes, and/or relations are encountered or conceived of.
d. New sets of circumstances are encountered or conceived of.

12. Weaknesses of the Value Model. Having presented the basic Value Model, we can enumerate some of its significant weaknesses:

a. Great conceptual and practical problems are encountered if we try to extend and refine the crude definitions given for the components of the Value Model.
b. It is unclear how to distinguish between Needs and Desires, and so between Primary and Secondary Values.
c. None of the assumptions listed in Point 10. above can be "proven" and some (for example, Point 10 a.) seem extremely doubtful.
d. The Value Structure description seems plausible but is difficult to demonstrate in practice.
e. Generally speaking, the Value Model is too vague and oversimplified for uses other than offering a first appreciation of Value issues and problems.

13. How Value Structures change. Some ideas about how Value Structures change are given in Point 11. above. Some further ideas are: /LM13/

a. Identification of new Needs--whether via fresh experiences or via escalation of Desires into Needs--generates new Primary Values. These new Primary Values must then be integrated with existing Primary Values and existing Secondary Values.
b. Identification of new Desires via fresh experiences generates new Secondary Values which must be integrated into the Value Structure.
c. Experiencing or imagining new resources, processes, or relations may challenge the existing Value Structure. The result may be a reordering of the Value Structure, and/or the creation of new Primary or Secondary Values.
d. Encountering or imagining new sets of circumstances may challenge the existing Value Structure. The result again may be a reordering of the Value Structure, and/or the creation of new Primary or Secondary Values.

14. How Value Structures impact on Alternative Futures. To the extent that a simplistic Value Structure Model such as this one affords insights about human behavior, the Model implies such impacts as the following on Alternative Futures:

a. Each forecaster must and does make many critical assumptions and critical judgments about Alternative Futures which stem from:

(1) His own Value Structure.
(2) His perception of the existing Value Structure as it pertains to his forecast topic.
(3) His estimate of how future Value Structures may affect Alternative Futures pertinent to his topic.
(4) Personal or societal Value Structure conflicts--Primary-Primary conflicts, Primary-Secondary conflicts, and Secondary-Secondary conflicts--will create special possibilities for Discontinuities affecting the forecast topic. (Discontinuities are discussed in Learning Module 8.)

15. Accounting for Value Structures in forecasting Alternative Futures. We have seen how difficult it is to account for human values in trying to forecast Alternative Futures for any topic. Nonetheless, such factors as those suggested in Point 14. above are and must be considered in preparing forecasts about many topics--perhaps even most topics. Such factors are especially crucial when prescriptive forecasts are made--that is, forecasts in which the forecaster hopes to identify particular alternative futures which he then hopes to actualize or avoid through planning and/or action. (Non-prescriptive and prescriptive forecasts are discussed in Learning Modules 2 and 4.)

Learning Module 14: TRANSCENDENTAL CHANGE

Objectives:

1. To compare and contrast Transcendental Change with other forms of Change treated in Learning Module 6.
2. To identify and discuss five basic aspects of Transcendental Change.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. The following types of change rates were identified and discussed in Learning Module 6:

   a. No-Change
   b. Step Change.
   c. Linear Change.
   d. Exponential Change.
   e. Asymptotic Change.

2. Transcendental Change is a special form of Change. Transcendental Change may have a change rate like any of those listed in Point 1. above. Most often, perhaps, Transcendental Change is perceived as a rapid, sudden Step-Change. Some examples are:

a. The Birth of Christ.
b. Explosion of the first atomic bomb.
c. Perfection and mass use of polio vaccine.
d. First manned Moon landing.

3. Transcendental Change usually exhibits some or all of the following aspects:

a. Perceived as a sudden, dramatic change.
b. Perceived as having an irreversible impact.
c. Perceived as making significant alterations in the relative probabilities of many important alternative futures.(Some become impossible or much less probable, while others become much more probable or inevitable.)

4. Transcendental Change is a huge and little-understood topic. This Learning Module discusses five aspects of Transcendental Change:

a. Its origins.
b. Its forecastability.
c. Its magnitude of impact.
d. Its timing and scheduling.
e. Its significance.

5. Origins of Transcendental Change(T.C.)

a. T.C. origins often found in the cross-interaction of many other, lesser changes whose transcendental interactions were not widely or clearly foreseen. Some examples of such T.C. are:

    (1) U.S. suburban sprawl.
    (2) The "generation gap" (actually, an education gap).
    (3) The modern Civil Rights movement.

b. T.C. often has its most significant impacts geographically or societally far removed from its point of origin. Some examples:

    (1) Impact of low-priced automobiles on courtship patterns.
    (2) Impact of mass production on social customs, mores.
    (3) Impact of Vietnamese War on U.S. society and culture.

c. T.C. origins are often found in persons or circumstances where desperation or despair are deep-seated. Examples: /LM14/

(1) Suicide
(2) Homicide
(3) War
(4) Religious conversions

6. Forecastability of Transcendental Change.

a. The evangelical teachings of religious prophets, such as John the Baptist represent one of the most ancient forms of T.C. "forecasting." Note that such T.C. forecasts may be "self-fulfilling prophecies" if enough persons hear and heed them.

b. T.C. forecasts may sometimes be based on trend projections, when critical trends can be identified. Examples:

(1) Projection of maximum airspeed trends correctly implied the invention of fundamental new airplane designs when the speed of sound was reached.
(2) Population trend projections forecast T.C. problems as population totals and densities increase.
(3) Fundamental changes in social patterns can be forecast on the basis of a significant change in the average age of a population.

c. Many T.C. phenomena arise out of Discontinuities. A Discontinuity (see LM 8) is any significant shift in previously stable aspects or relations of a topic. The examples of T.C. given under Points 2 and 5 above are for the most part examples of T.C. based on discontinuities. As explained in Learning Module 8, the existence of significant discontinuities imposes severe limits on forecastability. T.C. phenomena on the whole, therefore, are often very difficult to forecast.

7. *Transcendental Change's magnitude of impact.* /LM14/
The magnitude of impact of a T.C. may be difficult to assess, but can be considered in such terms as:

a. *How visible* is the T.C. *when it occurs?* Initial visibility may range from *low* to *high*. Examples:

   (1) Birth of Christ: *Low* visibility *then*.
   (2) Explosion of atomic bomb: *High* visibility *then*.

b. *How widely felt* is the T.C. *when it occurs?* Initial impact may be *narrow* or *broad*. Examples:

   (1) Introduction of numerical control machine tools: *Narrow* impact at first.
   (2) Introduction of polio vaccine: *Broad* impact at first.

c. *How rapidly* is the T.C.'s impact *diffused?* T.C. diffusion rate may be *slow* or *rapid*. Examples:

   (1) Use of antiseptics in medicine: *Slow* diffusion rate.
   (2) Purchase of television sets in U.S.: *Rapid* diffusion rate.

d. *How widely* is the T.C.'s impact *diffused?* T.C.'s impact may be *localized* or *globalized*.

   (1) Mayan temples: *Localized* impact.
   (2) Automobile: *Globalized* impact.

e. In retrospect, *how great an impact* has the the T.C. had. While it may reasonably be argued that a change is *not* a Transcendental Change *unless* it makes a *fundamental* impact, it can also be reasonably argued that some T.C.'s make a greater impact than others. *Examples*:

   (1) Introduction of male condums: *Important* impact.
   (2) Introduction of female contraceptive pills: *Fundamental* impact.

8. Significance of Transcendental Change for Alternative Futures. A T.C. most often influences Alternative Futures by bringing to urgent, general, and often prolonged attention: /LM14&15/

a. New or newly perceived resources, processes, or relations.
b. New or newly perceived Needs.
c. New or newly perceived Desires.
d. New or newly perceived circumstances.
e. New or newly perceived capacity to manage futures.
f. Negation of any or all of the above--that is--the weakening or disappearnence of what were previously perceived as available and/or valid resources, processes, relations, Needs, Desires, circumstances, or capacities for futures management.

Learning Module 15: STABILITY

Objectives:

To discuss the relation between:
1. Stability and Change.
2. Stability and Limits.
3. Stability and Stress.
4. Static and Dynamic Stability.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Stability must be discussed in relation to Change Rates. Change Rates are discussed in detail in Learning Module 6. Basically, Change Rate refers to the speed with which one set of circumstances is transformed into some other set of circumstances.

Example: If a dry lake has a total holding capacity of 500 million gallons and water begins to flow in at the rate of one gallon per hour, the Change Rate (transforming an empty lake into a full lake) is very slow, compared with the lake's capacity.

2. The simplest form of Stability is *Static Stability*. Static Stability refers to any situation in which there is a No-Change or Zero Change Rate--that is, in which *no* change is occurring (see Learning Module 6 for discussion). /LM15/

Examples: There is Zero Change over time in the amount of water (all forms) available in the Earth and its atmosphere. There is Zero Change in the measured length of one foot from one time to another. That is to say, the *amount* of water on Earth and the measured *length* of a *foot* exhibit Static Stability.

3. Pure Static Stability is rare. In every object or situation, *something*--although not necessarily something *significant*--is usually changing, no matter how slightly. Stability is therefore usually a *relative* matter--something is *more* stable or *less* stable in comparison to something *else*, in *comparison* to its own stability in the past, etc.

4. *Stability and Limits*. In a Pure Static Stability situation, Zero Change (No-Change) is the rule. But since Stability is usually *relative*, Stability usually is *more limited* or *less limited* with respect to whatever *Change Comparison Standard* is used. Thus Stability is usually assessed in terms of some *limit(s)* on Stability.

5. *Stability Limits* may be either or both of two types:

a. The Limit representing the total or maximum amount of change which can be accepted *ever* without disrupting or destroying *forever* an existing Pattern.
Example: A person who becomes progressively more ill as time passes can become only *so* ill; after that, he dies.

b. The Limit representing the total or maximum amount of change which can be accepted *in any one Time-Interval* without disrupting or *destroying forever* an existing Pattern.
Example: A person has some lifetime capacity to tolerate nuclear radiation. But a small fraction of that total may kill him *if he receives too much at one time*.

6. Whenever either the total or the per Time-Interval Stability Limits are exceeded for a given Pattern, one of two outcomes is possible:

a. The existing Pattern or situation may be completely disrupted or destroyed. Example: A flower thrown into a fireplace is totally consumed.

b. The existing Pattern or situation may be temporarily or permanently transformed into some other Pattern or situation which is more stable than the old Pattern or situation, given the new circumstances. Example: A Primary Nuclear Family in which the father is killed may survive by moving in with relatives or a reconstituted family may be formed if the widow remarries.

7. Stability and Stress. Change reduces Stability. As sustained or increasing change decreases Stability towards its Limits, the Pattern or situation is more and more apt to be totally disrupted or transformed into some more stable state. As the probability of disruption or transformation increases, we can say that stress increases. Stress in any Pattern or situation is induced whenever Stability can be maintained only with increasing difficulty.

Example: A lover experiences Stress when he must woo his beloved ever more and more ardently in order to sustain a previous level of reciprocal expression on the part of his beloved. Or--another example--Stress can be observed in a board as a heavy weight forces the board towards itsbbreaking point.

8. Dynamic Stability. A Pattern or situation exhibits Dynamic Stability when it is able to avoid disruption over some range of Change within acceptable Limits. In some instances mostly Static Stability is exhibited, as in the cases of a stone or a board. In other instances a great deal of Dynamic Stability is exhibited, as in the cases of an airplane in flight or a symphony orchestra playing.

9. The simplest example of Dynamic Stability is one in which there are two stable states which can be occupied or exhibited alternatively.

Examples: A lightswitch is either on or off --both states are stable. The eyelids are either open or closed--both states are stable.

10. In many cases, however, a Pattern or situation which exhibits Dynamic Stability has _many stable states_. An airplane in flight can maintain _its stability in many different ways_ in response to many different atmospheric conditions. A symphony orchestra playing can remain in time and in tune while playing an endless variety of music.

11. Both Static Stability and Dynamic Stability are important. Even a stone must expand and contract with temperature changes--that is, even a stone has some significant _Dynamic_ Stability. Even an airplane or a symphony orchestra requires metals and structural elements which respond as little as possible to environment changes--that is, even an airplane or an orchestra exhibit some significant _Static_ Stability.

12. On the whole, Static Stability is more important in simpler Patterns and situations, while Dynamic Stability is more important in more complex Patterns and situations. Increased complexity creates many more opportunities for dynamic interactions.

13. Understanding Stability is important in futures studies because Stability is so intimately linked with the processes of Change, which in turn is intimately linked with the concept of Alternative Futures.

A Learning Guide for Use with

Introduction To Futures Studies Concepts and Methods:

A Curriculum Guide

Introduction

This LEARNING GUIDE is designed for use with the CURRICULUM GUIDE presented in Appendix A of this report, to which the reader should refer.

The LEARNING GUIDE consists of the following Sections:

Section 1 through 15: Suggested exercises, assignments, and references for each of the 15 Learning Modules into which the CURRICULUM GUIDE is organized (see Appendix A).

Section 16: A suggested list of basic reading references.

Section 17: A descriptive listing of useful 16 mm films.

Section 18: A referral title list of popular music recordings which may be useful.

Section 19: A referral title list of poems which may be useful.

As noted in Learning Module 2, Point 13, this curriculum design is based primarily on reasoned, logical analysis. This approach was considered essential in seeking to delineate Futures Studies concepts and methods in a comprehensible fashion. As further noted in LM 2, however, this approach either excludes or neglects other older, equally valid approaches to conjectures about alternative futures: intuition and reasoned synthesis as contrasted with reasoned analysis.

This LEARNING GUIDE seeks to strike a broader, more balanced approach to Futures Studies learning resources. Thus while Sections 1 through 15 adhere to the analytic approach, the general listing of films, popular music, and poetry presented in Sections 17, 18, and 19 provide entry to quite different perspectives about possible futures. Further, some of the basic reading references presented in Section 16 also depart from the strictly rational, analytic approach.

As suggested in Learning Module 2, Points 15, 16, and 17, faculty and students are urged and encouraged to use the CURRICULUM GUIDE selectively--to pick and choose from it those concepts and methods best suited to the interests and learning styles of individuals or groups using the GUIDE. The materials listed in this LEARNING GUIDE should be treated in exactly the same spirit. Like the CURRICULUM GUIDE, this LEARNING GUIDE is regarded by the authors as a point of departure, on the basis of which each user should develop his own GUIDE.

Learning Guide Section 1: Accompanies Learning Module 1: THE STANDARD STUDY PROCEDURE, PART I

Suggested Exercises: (in class or after class, individually or in groups)

1. Name ten synonyms or related words for FORESIGHT. Do the same for INSIGHT. Compare the two lists, considering the similarities and the differences.

2. The Standard Study Procedure is based on the premise that detached, objective, systematic observation is possible and useful. IS IT? If so, what are its STRENGTHS and WEAKNESSES?

3. The Standard Study Procedure is based on the premise that you are interested in studying alternative futures for some particular topic. What is it? What is the nature of your interest in that topic?

Suggested Assignments:

1. Choose one or two narrow and "absurd" topics. Individually, make a quick pass at describing the topic(s) in terms of the PATTERN and its ENVIRONMENT. Spend no more than 5 or 10 minutes on each topic. Later, compare your results with others, and discuss the reasons for similarities and differences. Some possible topics might be:

    a. Bubble gum.
    b. Perspiration.
    c. Insults.
    d. Hairdos.
    e. Bricks.

2. If you are beginning your futures studies with this LM, take a Pre-test personality inventory test. Plan to take the Post-test after your first studies are completed, to see how (if at all) your orientation has changed. Many such tests are available. Noel McInnis (then at Kendall College) has used the Everett G. Shostrum personality orientation inventory for this purpose in some futures studies courses.

3. Prepare a written, 500-word statement explaining why you should learn and apply the Standard Study Procedure. Prepare a second 500-word statement explaining why you should not. Finally, write a 100-word statement explaining which view you find most convincing, and why.

Suggested References:

1. Donald N. Michael, The Unprepared Society: Planning for a Precarious Future. New York: Basic Books, 1968, 132 pages, $4.95.

2. Max Ways, " Don't We Know Enough To Make Better Public Policies?," Fortune Magazine, April 1971, pages 64+.

3. Edmund Carpenter, They Became What They Beheld. New York: Ballantine Books, 1970, unpaged, $3.95.

Suggested Films:

1. The Unexplained
2. The Physicists: Playing Dice With The Universe
3. Evolution In Progress

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 2: Accompanies Learning Module 2: THE STANDARD STUDY PROCEDURE, PART II

Suggested Exercises: (in, after class, individually or in groups)

1. Pick a topic or Pattern. Using information you already have, complete an ADVENT Form I, Observation Report Form.

2. Using the same topic and limiting yourself to the information used in complete Form I, complete an ADVENT Form II, Forecast Report Form.

3. Make an oral or written critique of the Standard Study Procedure. Be sure to include specific suggestions for improving it or for an alternative study approach.

Suggested Assignments:

1. Submit a written list of ten topics or Patterns whose alternative futures interest or concern you. For each, state the nature of your interest and what you might hope to gain by studying its alternative futures.

2. Interview 5 to 10 persons. Ask each to name one futures topic, Pattern, or issue which interests them. Ask each to provide his own interpretation of the term "alternative futures." Ask each how he has or would set about studying alternative futures pertinent to his interest.

3. Select a futures topic or Pattern for serious study. Begin assembling information. Submit a first outline plan for making your Observation and Forecast.

Suggested References:

1. Burnham P. Beckwith, The Next 500 Years. New York: University Exposition, 1967, 341 pages, $10.00.

2. Wendell Bell & James A. Mau, editors, The Sociology of the Future. New York: Russell Sage Foundation, 1971, 464 pages.

3. Arthur C. Clarke, Profiles of the Future. New York: Bantam, 1968, 235 pages, paper.

Suggested Films: (see Section 17 for complete details)

1. Stranger Than Science Fiction
2. The Futurists
3. Pollution Is A Matter of Choice

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 3: Accompanies Learning Module 3: THE TIME-LINE

Suggested Exercises: (in,after class, individually or in groups)

1. Take turns estimating the length of one minute. Record your several estimates, and note the variations.

2. Develop a list of sayings, maxims, and cliches about time.

3. Discuss the difference between "actual future" and "alternative future."

Suggested Assignments:

1. The Time-Line is only one arbitrary description of Time. Design a different model which explains and relates the following: "beginning," "end," "event," "past," "present," "future," "alternative future."

2. Submit a written 500-word comment on those aspects of Time which puzzle you most.

3. Conceive and be ready to present in class a simple experiment or demonstration which explains some aspect of Time.

Suggested References:

1. Henry Yaker and others, editors, The Future Of Time: Man's Temporal Environment. New York: Doubleday, 1971, $10.00.

2. Joost A.M. Meerloo, Along the Fourth Dimension: Man's Sense of Time and History, illustrated by Carl Smith. New York: John Day, 1970, $8.95.

3. Julius T. Fraser, editor, The Voices of Time. New York: George Braziller, Inc., 1966.

Suggested Films: (see Section 17 for complete details)

1. Reflections on Time
2. Time Is
3. Distinction of Past And Future

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 4: Accompanies Learning Module 4: APPRAISING FUTURES REPORTS

Suggested Exercises: (in, after class, individually or in groups)

1. Make and submit ten predictions or prophecies.
2. Project the population of your community for the next decade.
3. Discuss weather forecasting. How accurate or inaccurate is it, and why?

Suggested Assignments:

1. Find two forecasts and submit written critiques for each, using the "ideal forecast" standards given in LM 4 (Point 5).

2. Make a forecast for any topic. Submit your forecast in a written statement, 1500 words maximum.

3. Identify ten people in your community who must either make forecasts or use forecasts. For each, give a 200 word description of why the forecast is made or used, and how it is used.

Suggested References:

1. Joseph P. Martino, editor, An Introduction To Technological Forecasting. World Future Society Book Series. New York: Gordon & Breach, June 1972, paper, $6.50.

2. Otis Dudley Duncan, "Social Forecasting--The State of the Art," The Public Interest, No. 17, Fall 1969, pages 88-118.

3. David Hackett, Historians' Fallacies. New York: Harper & Row, 1970, 338 pages, $10.00.

Suggested Films: (see Section 17 for complete details)

1. City (1939)
2. Man and the Second Industrial Revolution
3. Wired World

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 5: Accompanies Learning Module 5: FUTURES STUDIES METHODS

Suggested Exercises: (in, after class, individually or in groups)

1. For each of the six basic methods mentioned, identify one or two situations in which the use of a given method would be inappropriate.

2. Select a sample topic. Discuss how alternative futures for that topic would be studied using each of the six methods.

3. Identify and discuss futures studies methods other than those mentioned in the LM.

Suggested Assignments:

1. Find and submit a written description of one futures report for each of the six basic methods--six reports in all.

2. Prepare and be ready to present and defend an analysis showing how a forecaster's assumptions and critical judgments affect the content of his forecasts.

3. Select any one topic whose alternative futures interests you. Select any one of the six basic futures studies methods. Prepare a brief written proposal explaining how you would apply that method to your topic.

Suggested References:

1. Herman Kahn and Anthony J. Wiener, The Year 2000: A Framework for Speculation on the Next Thirty-Three Years. New York: Macmillan, 1967, 431 pages, $9.95.

2. Daniel Bell, "Twelve Modes of Prediction," Daedalus (American Academy of Arts and Sciences), Summer, 1964, pages 845-80.

3. Clark C. Abt, Serious Games. New York: Viking books, 176 pages, $1.95.

Suggested Films: (see Section 17 for complete details)

1. Games Futurists Play
2. Weather: Who Votes For Rain?
3. America and Americans

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 6: Accompanies Learning Module 6: CHANGE

Suggested Exercises: (in, after class, individually or in groups)

1. Give one or two examples for each of the five Change Rates identified in the LM.
2. Give three examples of Quantitative Change and explain how it is or might be counted or measured. Give three examples of Qualitative Change and explain why it cannot be counted or measured.
3. Select some form of change which is now occurring. Identify and contrast the Change Rate Comparison Standards which might be applied in observing or measuring the change.

Suggested Assignments:

1. Submit a 500-1000 word commentary which compares the similarities and differences of physical change and behavioral change, individual or social.
2. Submit a 500 word statement which identifies and briefly describes what you believe to be the three most significant changes (any type) now occurring which represent an Asymptotic Change Rate.
3. For any futures topic you choose, submit a brief written description of the Change Rate Comparison Standards which might be appropriate, and suggest how observed significance of the change might vary depending on the Standard applied.

Suggested References:

1. Kenneth E. Boulding, The Meaning of the Twentieth Century:The Great Transition. New York: Harper & Row, 1965, 208 pages, paper, $1.45.
2. Selwyn Enzer, Dennis Little & Frederick D. Lazar, Some prospects for Social Change by 1985 and Their Impact on Time/Money Budgets. Middletown, Connecticut: Institute for the Future, March 1972, Report S-1-25.

3. Don Fabun, The Dynamics of Change. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967, 300 pages.

Suggested Films: (see Section 17 for complete details)

1. Future Shock: Crisis in the 800th Lifetime
2. Stranger Than Science Fiction
3. Universities: Tearing Down The Ivy

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 7: Accompanies Learning Module 7: ALTERNATIVE FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Suggest and execute some insignificant but absurd behavior or activity which you believe no one else could have foreseen. Explain why this "alternative" could not have been foreseen. (Example: stand on your head).

2. Individually, make a brief list of important events you foresee will occur in your community during the next 24 hours. Then compare your list with others for similarities and differences.

3. Try to identify five developments or events whose timing and details are absolutely predictable. Be prepared to explain and defend your selections.

Suggested Assignments:

1. Identify some event which has at least two different and mutually exclusive possible outcomes (a ball game, an election, etc.). Submit a written 500 word commentary describing the major consequences which would follow from each outcome, in contrast to the other(s).

2. Identify by one or a few words a series of ten possible and different alternative futures for your own life for the next decade. Then try to identify the critical developments or events which might determine the relative probabilities for each alternative you have named.

3. Selecting any topic, interview five people and be prepared to report your findings in their replies to this question: With respect to (your topic), what do you believe could happen during the next twelve months, and what do you believe will happen?

Suggested References:

1. Contemporary Societal PROBLEMS. Menlo Park, California: Educational Policy Research Center, Stanford Research Institute, June 1971, 46 pages.

2. Raul De Brigard and Olaf Helmer, Some Potential Societal Developments, 1970-2000. Middletown, Connecticut: Institute for the Future, April 1970, Report R-7, 134 pages.

3. Kenneth E. F. Watt, "Man's Rush Toward Deadly Dullness--Diversity Is More Than The Spice of Life," Natural History, February 1972, 7 pages.

Suggested Films: (see Section 17 for complete details)

1. Multiple Man
2. Genetics: Man The Creator
3. Multiply and Subdue the Earth

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 8: Accompanies Learning Module 8: FORECASTABILITY

Suggested Exercises: (in,after class, individually or in groups)

1. Identify and discuss three topics which you believe are most forecastable and three which are least forecastable.

2. Select any forecast topic. For that topic,identify and discuss its significant continuities and its significant discontinuities.

3. Some events--such as elections--can be forecast according to a fixed time or schedule. Other events--such as when U.S. population may reach 300 million--can be forecast only in terms of assumptions about prior conditions and rates of change. Identify and briefly discuss one event of each kind.

Suggested Assignments:

1. Select any forecast topic, and submit a 500-1000 word written discussion about its forecastability.
2. Select any forecast topic. Submit a 500-1000 word written commentary about the futures manageability of that topic.
3. Consulting the literature,find three forecasts which events have shown to be in significant error. Submit a 500-1000 word written commentary identifying these errors and relating the sources of error to forecastability.

Suggested References:

1. Nigel Calder, editor, The World in 1984. Baltimore: Penguin Books, 1965, 2 volumes, 215 pages & 205 pages, paper.
2. Arthur C. Clarke, Profiles of the Future. New York: Bantam Books, Inc., 1968, 235 pages, paper, $.75.
3. Jay W. Forrester, "The Counterintuitive Behavior of Social Systems," Technology Review, January 1970.

Suggested Films: (see Section 17 for complete details)

1. The Unexplained
2. The Physicists: Playing Dice With The Universe
3. Stranger Than Science Fiction

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 9: Accompanies Learning Module 9: CONFIDENCE IN FORECASTS

Suggested Exercises: (in,after class, individually or in groups)

1. Identify three forecasters (individuals or organizations) in whose forecasts on particular topics (name the topics) you would have the greatest confidence. Similarly, those in whose you would have the least confidence. Discuss.
2. Identify three forecast topics whose nature makes it possible to use relatively long time-horizons. (Examples: Population growth, resource consumption).

Identify three topics whose nature requires the use of relatively short time-horizons. (Examples: clothing fashions, professional sport clubs competitive standings).

3. Select any three forecast topics. For each, indicate which forecasting method(s) could yield the forecast in which you would have the most confidence and which would give you the least confidence. Discuss.

Suggested Assignments:

1. Using any published forecast, submit a 500-1000 word confidence evaluation statement based on the six factors identified in the LM (Point 2).

2. Select any forecast topic, and for it prepare a topical definition and scope statement for discussion in class. Be prepared to critique similar statements written by others. If your statement is perfectly written, no one should have any questions to ask about it.

3. Identify a widely known futurist (e.g. Dennis Gabor, Herman Kahn, Olaf Helmer). On the basis of what you can learn about the forecaster, submit a 500-1000 word statement discussing those forecast topics for which this forecaster would have your greatest and least confidence. Explain.

Suggested References:

1. Editors of New York Times Economic Review (annual feature), "Search for Meaning Amidst Change," June 6, 1969.

2. Jay W. Forrester, World Dynamics. Cambridge, Massachusetts: Wright-Allen, 1971, 72 pages.

3. John McHale, "World Facts and Trends," Futures, September 1971, pages 216-301, and December 1971, pages 385-95.

Suggested Films: (see Section 17 for complete details)

1. Weather: Who Votes For Rain?
2. A View of America From the 23rd Century
3. Future and the Negro

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 10: Accompanies Learning Module 10: ATTITUDES TOWARDS FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Decide which of the five basic attitudes presented in the LM best describes your overall posture towards futures. If none best describe you, provide your own category. In any case, explain your selection.
2. Using the five-category typology given, estimate what fraction or percent of people you know personally fall under each category. Compare your estimates with others.
3. Select a forecast topic. For that topic, name at least five ways in which the forecaster's attitudes might affect the content of his forecast.

Suggested Assignments:

1. Identify and submit 500-1000 word descriptions of one or more forecasts which represent each of the five basic attitudes mentioned in the LM.
2. Genetic inheritance, socio-economic status, early childhood experience, and current needs and desires are some factors which can have a significant impact on our attitudes towards futures. Which of these do you consider most important, and why? What other factors do you believe are important? Submit your answer in a 1000 word written statement.
3. Select a futures topic about which you are pessimistic. Discuss what sorts of future developments and events would be required to modify or eliminate your pessimism. Submit your discussion in a 1000 word written statement.

Suggested References:

1. F.M. Esfandiary, Optimism One: The Emerging Radicalism. New York: Norton, 1970, 249 pages, $5.95.
2. Gordon Rattray Taylor, The Doomsday Book: Can The World Survive? New York: World, 1970, $7.95.
3. Fred Polak, The Image of the Future. New York: Oceana, 2 volumes, 1961.

Suggested Films: (see Section 17 for complete details)

1. Technology: Catastrophe or Commitment?
2. "1985"
3. Multiply and Subdue the Earth

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 11: Accompanies Learning Module 11: CAUSALITY AND FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Identify three personal beliefs which you have modified significantly within the past two years. Cite the factors which caused you to change your beliefs. Then identify three other personal beliefs which you suspect you may modify during the next two years. Again, cite the factors which explain your selections. Discuss.

2. Using this form--"____________causes__________," list five cause-effect relations which are most important to you. Be prepared to explain and defend them.

3. Identify three significant recent or current developments or events for which you can see no discernible cause. Discuss them.

Suggested Assignments:

1. Select any forecast topic. For that topic, submit a 1000 word written discussion based on the five causality factors mentioned in the LM (Point 3).

2. Which is the more significant "cause" of your behavior--your experience in the past or your present goals for the future? Submit a 1000 word commentary which explains.

3. Develop and be prepared to present in class an experiment or demonstration which explains some aspect of cause-effect relations.

Suggested References:

1. ANNALS of the New York Academy of Sciences. Environment and Society in Transition. New York:

New York Academy of Sciences, 1971, 699 pages.

2. Eleanor Bernert Sheldon & Wilbert E. Moore, editors, Indicators of Social Change: Concepts and Measurements. New York: Russell Sage Foundation, 1968, 900+ pages.

3. Charles R. Dechert, editor, The Social Impact of Cybernetics. New York: Simon & Schuster, 1966, 206 pages, Clarion paperback.

Suggested Films: (see Section 17 for complete details)

1. Weird World of Robots
2. Evolution in Progress
3. Tragedy of the Commons

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 12: Accompanies Learning Module 12: MANAGEABILITY OF FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Identify three activities which you believe you could but will not choose to engage in within the next 24 hours. For each, explain why you believe you could and why you believe you will not choose to do so.

2. The President of the United States "manages futures" to some extent. What are the basic means available to the President in seeking the alternative futures he prefers? What are the basic limits on his capacity to manage futures.

3. Assuming that you are at this moment participating in a futures studies class session, see if you can manage the immediate future by shortening or extending the scheduled class period.

Suggested Assignments:

1. Select some topic for which it appears the future has been managed extensively. (Examples: Placing man on the moon, developing the atomic bomb, commonplace use of contraceptives). Given your topic, discuss how the future was or is being "managed," whether it serves "good" or "bad" ends, whether in

your judgment the management was/is effective, and what limits have been encountered in seeking to manage the future. Submit your discussion in a 1000 word written statement.

2. The Whole Earth Catalog tells us: "Since we're gods, we'd better get good at it." Discuss this maxim as a futures management issue in a 1000 word written commentary.

3. Quite apart from futures studies or any forecast topic, submit a 500-1000 word statement explaining what it means to "manage" something.

Suggested References:

1. Dennis Gabor, Inventing the Future. New York: Alfred A. Knopf, 1964, 238 pages.

2. Peter F. Drucker, The Age of Discontinuity. New York: Harper & Row, 1969, 402 pages, $7.95.

3. Amitai Etzioni, The Active Society. New York: The Free Press, 1968.

Suggested Films: (see Section 17 for complete details)

1. Tamer of Wild Horses
2. The Ultimate Machine
3. Multiply and Subdue the Earth

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

Learning Guide Section 13: Accompanies Learning Module 13: VALUES AND FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Separately, prepare your own list of the three greatest problems confronting world society between now and 2000 A.D. and a second list of the three greatest opportunities. Compare your lists with others, and discuss.

2. Indicate the circumstances (if any) in which you would place your own life in jeopardy. Indicate the circumstances (if any) in which you would endanger or take the life of another person.

3. Discuss the meaning of the words "value" and "priority."

Suggested Assignments:

1. Prepare a listing of possible improvements in your community which have been debated or discussed within the past two years. Ask 15 people in the community to rank-order these possible improvements in one of three ways: "most needed," "least needed," "uncertain." Prepare a written 500-1000 word summary of your findings.
2. Design a simple game dealing with values and/or priorities which can be played by any small group.
3. Submit a written 500-1000 word account of any significant shift in your personal values or personal priorities during the past two years. If possible, indicate why you believe these changes occurred. Then identify possible changes in values or priorities which may occur in your life during the next two years.

Suggested References:

1. Kurt Baier & Nicholas Rescher, Values and the Future: The Impact of Technological Change on American Values. New York: Free Press, The Macmillan Co., 1971, 527 pages, $4.95 (original edition published in mid-60s).
2. Rene Dubos, So Human An Animal. New York: Scribner's, 1968.
3. Abraham H. Maslow, Religions, Values and Peak Experiences. New York: Viking Press, 1971.

Suggested Films: (see Section 17 for complete details)

1. "No. 00173"
2. Pollution Is A Matter Of Choice
3. But What Do We Do?

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

Learning Guide Section 14: Accompanies Learning Module 14: TRANSCENDENTAL CHANGE

Suggested Exercises: (in,after class, individually or in groups)

1. Identify the most important transcendental changes which have occurred during your lifetime--either in the world as a whole or within your own life sphere. Discuss.
2. Granted that transcendental changes often cannot be foreseen, what developments or events constituting transcendental changes might you expect during the remainder of your life? Discuss.
3. Identify a particular transcendental change you wish would occur. Then discuss briefly what trend shifts, developments, or events would increase the probability of such a transcendental occurrence.

Suggested Assignments:

1. Transcendental changes often are scoffed at or criticized whey they occur. (Examples: non-believers upon Christ's birth, horse-buggy enthusiasts when the automobile appeared. Identify one possible transcendental change which may be occurring now, then discuss contemporary attitudes and reactions about it. Submit a written 1000 word commentary.
2. Spend two hours in absolute seclusion and quiet. Do not read, eat, sleep, listen to music, watch TV, etc.--simply meditate. Submit a 500-1000 word written account of your experience.
3. Consult a dictionary or other sources for definitions and discussions of the concept of "charisma." Then select a living "charismatic figure" and discuss the origins and the impacts of his "charisma."

Suggested References:

1. Richard Ofshe, The Sociology of the Possible. New York: PRENTICE-HALL, Inc., 1970, 391 pages, paper, $5.95.
2. Claudio Naranjo & Robert E. Ornstein, On The Psychology of Meditation. New York: Viking Press, 1971, 248 pages, $7.95.
3. Robert Silverberg, Son of Man. New York: Ballantine Books, Inc., paper.

Suggested Films: (see Section 17 for complete details)

1. Religion: Making The Scene
2. Real Revolution: Talks By Krisna-Murta
3. Mind of Man

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

Learning Guide Section 15: Accompanies Learning Module 15: STABILITY

Suggested Exercises: (in,after class, individually or in groups)

1. Discuss this situation: Suppose that natural or synthetic replacements existed for all major organs and structures in the human body, including the brain and central nervous system. If an individual were subjected to part-by-part replacement at what point (if any) would he lose his original identity?

2. Suppose that you were assigned the task of designing a monument to some human achievement. The monument should remain physically intact and its site known to society for at least 500 years. Suggest a design and a location, and explain your selections.

3. Identify ten things "which never change." Explain and defend your selection to others.

Suggested Assignments:

1. Select any forecast topic. For that topic, discuss its statically stable aspects, it dynamically stable aspects, and the relation between its static and dynamic stability. Submit a written 1000 word commentary.

2. "Synchronus orbital satellites" maintain a permanent position above some fixed point on Earth. Is this a case of static stability or dynamic stability? Submit a written 500 word explanation.

3. In your opinion, what is the single greatest threat to social stability in the United States today? What is "social stability"? Submit a written 1000 word commentary.

Suggested References:

1. Gerald Feinberg, The Prometheus Project: Mankind's Search For Long-Range Goals. New York: Doubleday, Anchor Books, 1969, 264 pages, $1.45.

2. Warren G. Bennis & Philip E. Slater, The Temporary Society. New York: Harper & Row, 1968.

3. Richard Falk, This Endangered Planet. New York: Random House, 1971, 495 pages, $8.95.

Suggested Films: (see Section 17 for complete details)

1. Year of the Communes
2. Smalltown, U.S.A.
3. The Industrial Worker

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

LEARNING GUIDE SECTION 16:

A Selective Guide To Futures Studies Literature

Introduction

When in 1965 the reference guide Books in Print was consulted under the subject term "future," one single title was listed: The Future As History, by Robert Heilbroner (New York: Harper, 1959). Seven years later a similar check has not been made, because such a list would have been obsoleted long before it could be printed. Interest in futures studies and futures research has been spreading steadily and rapidly since the mid-Sixties, having reached a new take-off point with the worldwide popularity of Alvin Toffler's Future Shock.

The futures studies bibliographer in the mid-Sixties faced the difficult task of scrounging up even a modest list of appropriate entries. His counterpart today has an equally difficult task, but of a different sort: he faces an embarrassment of riches, and the question is where one draws the line.

What we have chosen to do in this bibliography is first to present a "mini-directory" of futures information resources, and then to offer a selective listing of items, using the following guidelines:

1. Cite substantial "landmark" items most often alluded to in the futures literature.

2. Cite major items--especially books--rather than shorter items as a rule. Thus the listing (subject to last-minute additions or deletions) includes 247 books, 51 documents or reports, and only 41 periodical or journal articles.

3. Cite generally-relevant items most, and narrowly specialized items least. One exception to this guideline has been made for technological forecasting, because this subject has to date constituted a major fraction of bona fide futures research, and because many of the issues dealt with by technological forecasters are relevant to futures research generally.

4. With a few exceptions, cite factual rather than fictional items. This guideline leaves a gaping hole in the case of science fiction, which we have tried to alleviate by citing other convenient and valuable sources of science fiction bibliographies.

Other Futures Studies and Futures Research Bibliographies

Among the more widely known and/or disseminated futures bibliographies are the following:

1. Future Studies Bibliography, by Billy Rojas, Program for the Study of the Future in Education, School of Education, University of Massachusetts, Amherst, Massachusetts. The first edition (January 1970) included some 1500 items organized under 16 categories. The second, revised edition appeared in 1971 and cites some 2000 items. The bibliography is mimeographed and may be purchased upon request to the address given above. Not annotated.

2. Essential Reading for the Future of Education, by Michael Marien, Educational Policy Research Center, Syracuse University Research Corporation, 1206 Harrison Street, Syracuse, New York 13210. The selected and critically annotated bibliography was published in February, 1971. It contains 200 items, organized under 20 categories, including three under "Methodology," and six under "General Trends and Descriptive Futures," which are not limited to education.

3. Alternative Futures for Learning: An Annotated Bibliography of Educational Trends, Forecasts, and Proposals, by Michael Marien, same address as 2 above. This listing contains 800 items--principally books and monographs--with about two-thirds annotated to some extent. March 1971, $5.00.

4. Not yet available but underway in 1972 for possible publication in 1973 is another critical bibliography by Michael Marien not limited to education at all. This will be the product of a multi-round Delphi Poll of practicing futurists which seeks to identify the seminal or essential items in the field. Dr. Marien's active and significant bibliographic projects do a great service to the entire futures field.

Dr. Dennis Livingston, political scientist and futurist now at Scripps Institute of Oceanography and a founder of the Science Fiction Research Association has identified a number of past and current bibliographic guides to science fiction. With expressions of gratitude, his references as prepared for a course at Case Western University in October, 1971 are reproduced as Items 5-9 below, plus the additional information given as Item 10:

5. "Everett F. Bleiler, The Checklist of Fantastic Literature. Shasta, 1948.

6. "Don Day, Index To The Science Fiction Magazine (1926-1950). Perri Press, 1952.

7. "W.R. Cole, A Checklist of Science Fiction Anthologies, With Supplement for Anthologies from 1964-1969.

8. "Frederick Siemon, Science Fiction Story Index: 1950-1968. American Library Association, 1971.

9. "Edwin S. Strauss, Index to the Science Fiction Magazines: 1951-1965. New England Science Fiction Association, 1966, with annual supplements.

10. "In addition, Fred Lerner (7 Amsterdam Avenue, Teaneck, New Jersey 07666) has prepared a Bibliography of Science Fiction Bibliographies and heads the Conference on the Bibliography of Science Fiction. Dale Mullen (Department of English, Indiana State University, Terre Haute, Indiana 47807) is preparing a definitive bibliography of Science Fiction in English 1496-1945. An annotated bibliography of the critical literature about Science Fiction will shortly be issued: Thomas D. Calreson, editor, Science Fiction Criticism: An Annotated Bibliography, Kent State University Press (Ohio)."

11. Bibliography on Automation and Technological Change and Studies of the Future, by Annette Harrison, RAND Corporation. October 1966, 24 pages, Report P-3365-1, RAND Corporation, 123 Main Street, Santa Monica, California.

12. Canadian Education and the Future: A Select Annotated Bibliography, 1967-1971, by Hugh A. Stevenson and William B. Hamilton, The University of Western Ontario, London, Canada, 1972, 260 items.

13. Among much else of great value, the book Futures Conditional by Robert Theobald (Indianapolis: Bobbs-Merrill, 1972, paper) includes an early bibliography prepared by Dr. Dennis Livingston (see Items 5-10 above).

Three other items which are not strictly speaking bibliographies, but which nonetheless offer good guides to past and current work in futures studies and futures research are given in items 14-16 below:

14. Future Studies Syllabus, by Billy Rojas and H. Wentworth Eldredge, revised edition, April 15, 1971, 86 pages, available from same address as Item 1 above.

15. "Education for Futurism in the United States: An On-Going Survey and Critical Analysis," Technological Forecasting and Social Change, Volume 2, 1970, by H. Wentworth Eldredge, pages 133-148. This article will be updated in 1972 by the author to present at the Third International Futures Research Conference in September 1972. Presumably, the revised paper will be available in 1973. The author is Professor of Sociology at Dartmouth College, Hanover, New Hampshire.

16. Typological Survey of Futures Research in the U.S., by Dr. John McHale, Center for Integrative Studies, State University of New York, Binghampton, New York. The first edition of this survey report (made under an NIMH grant) was issued in June 1970, 103 pages, mimeo. A second, revised edition is or shortly will be available.

Futurist Publications

(This list was published in Spring, 1971 by Dr. Dennis Livingston, as a part of his course syllabus for "Alternative World Futures," a course he taught at Case Western Reserve University).

1. 2000 Amenagement du Territoire Avenir, 59, Ave. Denfert-Rochereau, 75-Paris 14e, France.

2. Analysen Und Prognosen: Uber die Welt von Morgen ZBZ Mittellung, Zentrum Berlin fur Zukunftsforschung (ZBZ), Hohenzollerndamm 170, D-1000, Berlin 31, West Germany.

3. Analyse et Prevision, SEDEIS, 205 Boulevard St. Germain, Paris 7e, France.

4. Bulletin of Social Forecasting, Istituto Richerche Applicate Documentazione e Studi (IRADES), Via Paisiello 6, 00198 Rome, Italy.

5. Documentation Bulletin On Future Research 2000, Wolters-Noordhoff Publishing, Box 58, Groningen, The Netherlands.

6. Futures: The Journal of Forecasting and Planning, Iliffe Publishers, 32 High St.,Guildford, England.

7. Future Trends, Gesellschaft fur Zukunftsforschung, Karl-Muck-Platz 1, 2 Hamburg 36, West Germany.

8. Futuribili, Istituto per le Richerche di Economia Applicata (IREA), Via Venti Settembre 1, 00187 Rome, Italy.

9. Futuriblirne, Society for Research on Futures, Skovfaldet 2S, DK-8200 AARHUS N., Denmark.

10. Futurum, Carl Hanser Verlag, Munich, West Germany.

11. The Futurist: A Journal of Forecasts, Trends and Ideas About the Future. World Future Society: An Association for the Study of Alternative Futures, Box 19285, 20th Street Station, Washington, D. C. 20036.

12. WFS Bulletin, World Future Society, same address as 11 above.

13. IFRC Newsletter, International Future Research Conference (Secretariat), Lars Ingelstam, Institutionen for Matematik, Kungl, Tekniska Hogskolan, Stockholm 70, Sweden.

14. Technological Forecasting and Social Change, American Elsevier Publishing Company, 52 Vanderbilt Avenue, New York, New York 10017.

Futurist Organizations

Most of the publications cited in the preceding section are issued by futurist organizations. Many other futures studies and futures research organizations exist which do not publish journals or periodicals. Perhaps the most complete and current guide or directory of such organizations may be found in the following items:

1. Typological Survey of Futures Research in the U.S., by John McHale (See Item 16 in the preceding section titled, "Other Futures and Futures Research Bibliographies").

2. Long-Term Planning And Forecasting In Europe: 1968-1970, Division for Long-Term Planning and Policy, Directorate of Political Affairs, Council of Europe, Brussels, Belgium.

3. Technological Forecasting In Perspective, by Erich Jantsch, Organization for Economic Cooperation and Development (OECD), Paris, France.

4. The Delphi Exploration: A Computer-Based System for Obtaining Subjective Judgments on Alternative Futures, by Stuart Umpleby, Institute for Communications Research, University of Illinois, Urbana, Illinois, 1969.

In addition, some especially active futures research and consulting organizations include:

5. Association Internationale Futuribles, 52 Rue des Saints-Peres, Paris 7e, France (provides an open house and research services for visiting scholars).

6. Commission On The Year 2000, American Academy of Arts and Sciences, Boston, Massachusetts.

7. The Futures Group (Theodore Gordon), 124 Hebron Avenue, Glastonbury, Connecticut.

8. Hudson Institute, Quaker Ridge Road, Croton-on-Hudson, New York 10502.

9. Institute For The Future, Riverview Center, Middletown, Connecticut, 06457 (also offices in Menlo Park, California).

10. Mankind 2000 International, %Istituto Richerche Applicate Documentazione e Studi (IRADES), Via Paisiello 6, 00198, Rome, Italy.

11. Pacific House, 360 Bryant Street, Palo Alto, California 94301.

12. Program for the Study of the Future in Education, School of Education, University of Massachusetts, Amerherst, Massachusetts 01002.

13. Project on Canadian Education and the Future, School of Education, University of Western Ontario, London, Canada.

14. San Jose State College (now California State University, San Jose), Cybernetic Systems Program, BT 257, 125 South Seventh Street, San Jose, California 95114. (Note: The report of which this Bibliography is a portion was prepared by this Program under a grant from the U.S. Office of Education, Regional Research Program, Region IX, Dr. Walter Hirsch, Director. The Cybernetic Systems Program is directed by Professor Norman Gunderson).

15. Science Fiction Research Association, 7 Amsterdam Avenue, Teaneck, New Jersey 07666.

16. Stanford Research Institute, Educational Policy Research Center, 333 Ravenswood, Menlo Park, California.

17. Syracuse University Research Corporation, Educational Policy Research Center, 1206 Harrison Street, Syracuse, New York 13210.

A Selective Guide to Futures Studies And Futures Research Books

1. Clark C. Abt, Serious Games. New York, Viking Press, 176 pages, $1.95.
2. _________, Prospects for America: The Rockefeller Panel Reports. New York: Doubleday, 1961, 486 pages, $1.45, paper.
3. Clopper Almon, The American Economy to 1975: An Interindustry Forecast. New York: Harper and Row,1966.
4. Robert U. Ayres, Technological Forecasting and Long-Range Planning. New York: McGraw-Hill, 1969, 237 pages, $12.50.
5. Fritz Baade, The Race to the Year 2000. New York: Doubleday, 1962.
6. Ben H. Bagdikian, The Information Machines: Their Impact on Men and the Media. New York: Harper & Row, 1971, 359 pages, $8.95.
7. Ian G. Barbour, Science and Secularity: The Ethics of Technology. New York: Harper & Row, 1970, 152 pages, $4.95.
8. Raymond Bauer, editor, Social Indicators. Cambridge: M.I.T. Press, 1966.
9. Gregory Baum, The Future of Belief; Debate. New York: Herder & Herder, 1967.
10. Daniel Bell, editor, Toward the Year 2000. Boston: Houghton Mifflin Company, 1968.
11. Reinhard Bendix, Embattled Reason: Essays on Social Knowledge. New York: Oxford University Press, 1970, 396 pages, $9.75.
12. Warren G. Bennis and Philip E. Slater, The Temporary Society. New York: Harper & Row, 1968.
13. S. Bogoch, editor, The Future of the Brain Sciences. New York: Plenum Press, 1969.
14. Robert Boguslaw, The New Utopians: A Study of System Design and Social Change. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965.
15. Philip K. Book, Culture Shock. New York: Alfred A. Knopf, Inc., 1970.

16. Kenneth E. Boulding, The Meaning of the Twentieth Century: The Great Transition. New York: Harper & Row, 1965, 208 pages, $1.45 paper.

17. Carl Bratten, The Future of God. New York: Harper, 1969.

18. Zbigniew Brezezinski, America in the Technetronic Age. New York: Columbia University Press, 1967.

19. Zbigniew Brezezinski, Between Two Ages: America's Role in the Technetronic Age. New York: Viking Press, 1970.

20. James R. Bright, editor, Technological Forecasting for Government and Industry: Methods and Applications. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.

21. Harrison Brown and Edward Hutchings, Jr., Are Our Descendants Doomed? Technological Change and Population Growth. New York: Viking Press, 1971, $12.50.

22. Rexou Brown, Research and the Reliability of Estimates: An Appraisal Tool for Executives and Researchers. Cambridge: Harvard University Press, 1969, 257 pages, $9.00.

23. Arthur B. Bronwell, editor, Science and Technology in the World of the Future. New York: Wiley-Interscience, 1970, 394 pages, $11.95.

24. John Brunner, Stand on Zanzibar. New York: Ballantine Books, 1968, 650 pages, $1.65, paper.

25. Alastair Buchen, editor, Europe's Choices, Europe's Future. New York: Columbia University Press, 1966.

26. Ralph Wendell Burhue, editor, Science and Human Values in the 21st Century. Philadelphia: Westminster Press, 1971, 204 pages, $3.45, paper.

27. John Burke, editor, The New Technology and Human Values. Belmont, California: Wadsworth Publishing Company, 1967.

28. J. B. Bury, The Idea of Progress. New York: Dover Books, 1955 (originally published in 1932).

29. William F. Butler and Robert A. Kavesh, editors, How Business Economists Forecast. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966.

30. Nigel Calder, editor, The World in 1984. Baltimore: Penguin Books, 1965, 2 vols., 215 pages, $.75,paper.

31. Edmund Carpenter, They Became What They Beheld. New York: Ballantine Books, 1970, unpaged, $3.95.

32. Julian V. Casserley, In the Service of Man: Technology and the Future of Human Values. Chicago: Henry Regnery Company, 1967.

33. Marvin J. Cetron and Christime A. Ralph, Industrial Applications of Technological Forecasting: Its Utilization in R&D Management. New York: Wiley-Interscience, 1971.

34. Marvin Cetron, Technological Forecasting: A Practical Approach. New York : Gordon and Breach, 1969.

35. Stuart Chase, The Most Probable World. Baltimore: Penguin Books, 1969, $1.60, paper.

36. Colin Cherry, World Communication: Threat or Promise? A Socio-technical Approach. New York: Wiley-Interscience, 1971, 230 pages, $9.50.

37. C. West Churchman, The Systems Approach. New York: Dell, 1968, 243 pages, Delta paperback, $2.25.

38. Arthur C. Clarke, Profiles of the Future. New York: Bantam Books, Inc., 1968, 235 pages, $.75,paper.

39. Dandridge Cole, Beyond Tomorrow: The Next 50 Years in Space. Illustrated by Roy Scarfo. __________: Amherst Press, 1965, 168 pages, $7.50.

40. Frank Darling, editor, Future Environments of North America. New York: Conservation Foundation, 1968.

41. Sir Charles G. Darwin, The Next Million Years. New York: Doubleday, 1953.

42. F. N. David, Games, Goods, and Gambling. ________: Hafner, 1962.

43. Kingsley Davis, Human Society. New York: Macmillan, 1949, 633 pages.

44. Teilhard de Chardin, The Future of Man. New York: Harper, 1965.

45. Charles R. Dechert, editor, The Social Impact of Cybernetics. New York: Simon & Schuster, 1966, 206 pages, Clarion paperback.

46. Sebastian DeGrazia, *Of Time, Work and Leisure*. New York: 20th Century Fund, 1962.

47. Jose M. F. Delgado, *Physical Control of the Mind: Toward a Psychocivilized Society*. New York: Harper and Row, 1969, 282 pages, $7.95.

48. S. Demczynski, *Automation and the Future of Man*. London: Allen & Unwin, Ltd., 1964.

49. Ithiel de Sola Pool, Robert P. Abelson, and Samuel L. Popkin, *Candidates, Issues, and Strategies: A Computer Simulation of the 1960 and 1964 Presidential Elections*. Cambridge, Massachusetts: M.I.T. Press, 1965.

50. Edward J. Dent, *The Future of Music*. Oxford: Pergamon Press, 1965.

51. Alexis de Tocqueville, *Democracy In America*. Harper & Row, 1966, 485 pages.

52. ________ Dickson and ______ Brown, editors, *Future Goals of Engineering in Biology and Medicine*. New York: Academic Press, 1969.

53. Yehezkel Dror, *Ventures in Policy Sciences: Concepts and Applications*. New York: American Elsevier, 1971, 321 pages.

54. Peter F. Drucker, *The Age of Discontinuity*, New York: Harper & Row, 1969, 402 pages, $7.95.

55. Peter F. Drucker, editor, *Preparing Tomorrow's Business Leaders Today*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969.

56. Peter F. Drucker, *Technology, Management and Society: Essays*. New York: Harper & Row, 1970.

57. Rene Dubos, *Man Adapting*. New Haven, Connecticut: Yale University Press, 1965.

58. Rene Dubos, *So Human An Animal*. New York: Scribner's, 1968.

59. Mary Jane Dunstan and Patricia Garlan, *Worlds in the Making*. Englewood Cliffs, New Jersey: Prentice-Hall, 1970, 370 pages, paper, $4.95.

60. F. J. Ebling and G. W. Heat, editors, *The Future of Man*. New York: Academic Press, 1972, 212 pages, $8.95.

61. Jacques Ellul, The Technological Society. New York: Alfred A. Knopf, 1964.

62. F. M. Esfandiary, Optimism One: The Emerging Radicalism. New York: Norton, 1970, 249 pages, $5.95.

63. Robert C. W. Ettinger, The Prospect of Immortality. New York: Doubleday, 1964.

64. Amitai Etzioni, The Active Society. New York: The Free Press, 1968.

65. Alvin C. Eurich, editor, Campus 1980: The Shape of the Future in American Higher Education. New York: Delacorte, 1968, 327 pages.

66. Wayne O. Evans and Nathan S. Kline, editors, Psychotropic Drugs in the Year 2000: Use by Normal Humans. Springfield, Illinois: Charles C. Thomas, 168 pages, 1971, $7.75.

67. William R. Ewald, editor, Environment and Change: The Next Fifty Years. Bloomington: University of Indiana Press, 1968, 397 pages, $4.95.

68. William R. Ewald, editor, Environment and Policy: The Next Fifty Years. Bloomington: University of Indiana Press, 1968, 459 pages, $4.95.

69. William R. Ewald, editor, Environment for Man: The Next Fifty Years. Bloomington: University of Indiana Press, 1967, $2.95, paper.

70. Don Fabun, The Dynamics of Change. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967, 300 pages.

71. Richard A. Falk and Cyril E. Black, editors, The Future of the International Legal Order. Princeton: Princeton University Press, 1969, 2 volumes, 618 pages, $10.00.

72. Richard A. Falk, This Endangered Planet. New York: Random House, 1971, 495 pages, $8.95.

73. Gerald Feinberg, The Prometheus Project: Mankind's Search for Long-Range Goals. New York: Doubleday Anchor Books, 1969, 264 pages, $1.45.

74. Victor C. Ferkiss, Technological Man: The Myth and the Reality. New York: Mentor Books, 279 pages, paper, $1.50.

75. Leon Festinger, Henry Riecken, & Stanley Schacter, When Prophecy Fails. Minneapolis: University of Minnesota Press, 1956.

76. Jay W. Forrester, World Dynamics. Cambridge, Massachusetts: Wright-Allen, 1971, 72 pages.

77. Fortune Magazine editors, The Fabulous Future: America in 1980. New York: E. P. Dutton & Co., 1956.

78. Julius T. Fraser, editor, The Voices of Time. New York: George Braziller, Inc., 1966.

79. Erich Fromm, The Revolution of Hope: Toward A Humanized Technology. New York: Bantam Books, Inc., 1968.

80. Buckminster R. Fuller, Nine Chains to the Moon. Carbondale: Southern Illinois University Press, 1963.

81. Dennis Gabor, Inventing the Future. New York: Alfred A. Knopf, 1964, 238 pages.

82. John K. Galbraith, The New Industrial State. Boston: Houghton Mifflin Company, 1967.

83. John K. Galbraith, The Affluent Society. New York: The New American Library, 1958.

84. John K. Galbraith, The Affluent Society. Boston: Houghton Mifflin Company, rev. edition, 1969.

85. Eli Ginsberg, editor, Technology and Social Change. New York: Columbia University Press, 1964.

86. Nathan Glazer & Daniel Moynihan, Beyond the Melting Pot. Cambridge: M.I.T. Press, 1970.

98. William E. Goode, editor, The Dynamics of Modern Society. New York: Atherton Press, 1966.

99. Andrew M. Greeley, A Future to Hope In: Socio-religious Speculations. New York: Doubleday, 1969.

100. Leonard Gross, 1985: An Argument for Man. New York: Norton, 1971, $6.50.

101. Guggenheim Museum, On the Future of Art. New York: Viking Press, _____, $1.95 paper.

102. David Hackett, Historians' Fallacies. New York: Harper & Row, 1970, 338 pages, $10.00.

103. Everett E. Hagen, *On The Theory of Social Change.* Homewood, Illinois: Dorsey Press, 1962.

104. Daniel S. Halacy, Jr., *Cyborg: Evolution of the Superman.* New York: Harper & Row, 1965.

105. Daniel S. Halacy, Jr., *The Weather Changers.* New York: Harper, 1968.

106. J. B. Haldane, *Daedalus, or The Future of Science.* 1923 (publisher not given).

107. Edward T. Hall, *Technology and People.* Valley Forge, Pennsylvania: Judson Press, 1969.

108. ________ Hamalian & ________ Karl, *The Radical Vision: Essays for the 70s.* New York: Thomas Y. Crowell Company, 1970.

109. Charles Hampden-Turner, *Radical Man.* Cambridge, Massachusetts: Schenkman, 1970.

110. Alan Harrington, *The Immortalist.* New York: Random House, 1969, 324 pages, $6.95.

111. ______Heidt & ______ Etizion, editors, *Societal Guidance.* New York: Thomas Y. Crowell, 1969.

112. Robert Heilbroner, *The Future As History.* New York: Harper, 1959.

113. Olaf Helmer, *Social Technology.* New York: Basic Books, 1966, 108 pages, $8.00.

114. R. Hendrickson, *Future of Money.* Englewood Cliffs, New Jersey: Prentice-Hall, 1970.

115. Frank Herbert, *Dune.* New York: Ace Books, 1965, paper.

116. Francois Hetman, *The Language of Forecasting.* Paris: SEDEIS, 540 pages, $9.90.

117. Robert Houriet, *Getting Back Together.* New York: Coward, McCann & Geoghegan, 1971, 412 pages, $7.95.

118. Irving Howe, *Decline of the New.* New York: Harcourt, Brace, and World, 1970, 326 pages, $7.50.

119. Aldous Huxley, *Brave New World and Brave New World Revisited.* New York: Harper, 1960.

120. Aldous Huxley, Island. New York: New American Library Signet Book.

121. Erich Jantsch, Technological Planning and Social Futures. London: Associated Business Programmes, Ltd., 1972.

122. Charles Jencks, Architecture 2000: Prediction and Methods. New York: Praeger, 1971, paper, $3.95.

123. John Jewkes, David Sawers & Richard Stillerman, The Sources of Invention. New York: St. Martin's Press, 1958.

124. Robert Jungk & Johan Galtung, Mankind 2000. London: Allen & Unwin, Ltd., 1969, 368 pages, $7.95.

125. Robert Jungk, Tomorrow Is Already Here. New York: Simon & Schuster, 1954.

126. John Kettle, Footnotes on the Future. Toronto: Methuen, 1970, 248 pages, paper.

127. Herman Kahn & Anthony J. Wiener, The Year 2000: A Framework for Speculation on the Next Thirty-Three Years. New York: Macmillan, 1967, 431 pages, $9.95.

128. Lester A. Kirkendall & Robert N. Whitehurst, The New Sexual Revolution. __________: D.W. Brown, 1971.

129. Robert Klark, The Future of Man. Quincy, Massachusetts: Christopher Press, 1970, 220 pages, $7.95.

130. Richard Kostelanetz, editor, Beyond Left and Right: Radical Thought for Our Times. New York: William Morrow & Co., 1968, 436 pages, paper, $2.95.

131. Richard Kostelanetz, editor, Social Speculations: Visions for Our Time. New York: William Morrow & Co., 1971, 307 pages, $2.95.

132. Alfred Kuhn, The Study of Society. Homewood, Illinois: Irwin Dorsey Press, 1963.

133. Thomas Kuhn, The Structure of Scientific Revolutions. Chicago: University of Chicago Press, 1962.

134. Hans H. Landsberg, Leonard L. Fischman, & Joseph L. Fisher, Resources in America's Future: Patterns of Requirements and Availabilities, 1960-2000. Baltimore: The Johns Hopkins Press, 1963, 1017 pages.

135. Ralph Lapp, The New Priesthood: The Scientific Elite and the Uses of Power. New York: Harper & Row, 1965.

136. Eric Larrabee & Rolf Meyersohn, editors, Mass Leisure. Glencoe, Illinois: The Free Press, 1958.

137. Harold Lasswell, The Future of Political Science. New York: Atherton Press, 1963.

138. Leonard A. Lecht, Manpower Needs For National Goals in the 1970s. New York: Praeger, 1969.

139. Daniel Lerner, editor, Cause and Effect. New York: Free Press, 1965.

140. Daniel Lerner & Harold Lasswell, The Policy Sciences. Stanford, California: Stanford University Press, 1951.

141. Richard Lewinschn, Science, Prophecy and Prediction. Greenwich, Connecticut: Fawcett Publishers, Inc., 1962.

142. J. C. R. Licklider, Libraries of the Future. Cambridge: M.I.T. Press, 1965.

143. Staffan B. Linder, The Harried Leisure Class. New York: Columbia University Press, 1969, 182 pages, $7.00.

144. Perry London, Behavior Control. New York: Harper & Row, 1969.

145. Ferdinand Lundberg, The Coming World Transformation. New York: Doubleday, 1963, 395 pages.

146. Marya Mannes, They. New York: Doubleday, 1968, 215 pages, $4.95.

147. Simon Marcson, editor, Automation, Alienation and Anomie. New York: Harper & Row, 1970, 479 pages.

148. Kurt W. Marek, Yestermorrow. New York: Alfred A. Knopf, 1961.

149. Joseph P. Martino, editor, An Introduction To Technological Forecasting. World Future Society Book Series. New York: Gordon & Breach, June 1972, paper, $6.50.

150. Eleonora Masini, Social and Human Forecasting. Rome: IRADES, Edizioni Previsionali, 1972.

151. Abraham H. Maslow, Religions, Values and Peak Experiences. New York: Viking Press, 1971.

152. Abraham Maslow, *Toward A Psychology of Being*. New York: Van Nostrand, 1968.

153. Margaret Mead, *Continuities in Cultural Evolution*. New Haven, Connecticut: Yale University PRESS, 1964.

154. Margaret Mead, *Culture and Commitment: A Study of the Generation Gap*. New York: Doubleday & Natural History Press, 1970, 113 pages, paper, $1.95.

155. Shepherd Mead, *The Big Ball of Wax*. New York: Simon and Schuster, 1954.

156. Peter B. Medawar, *The Future of Man*. New York: Basic Books, Inc., 1961.

157. Joost A. M. Meerloo, *Along the Fourth Dimension: Man's Sense of Time and History*, illustrated by Carl Smith. New York: John Day, 1970, $8.95.

158. Donald N. Michael, editor, *Future Society*. ________: Aldin Publishers, 1970.

159. Donald N. Michael, *The Next Generation*. New York: Vintage Books, 1965, 218 pages, paper, $1.65.

160. Donald N. Michael, *The Unprepared Society: Planning for a Precarious Future*. New York: Basic Books, 1968, 132 pages, $4.95.

161. Arthur R. Miller, *The Assault on Privacy*. Ann Arbor: The University of Michigan Press, 1971, $7.95.

162. George W. Miller, *Moral and Ethical Implications of Human Organ Transplants*. Springfield, Illinois: Charles C. Thomas, 1971, 116 pages.

163. S. M. Miller and Pamela Roby, *The Future of Inequality*. New York: Basic Books, 1970, 272 pages, $7.95.

164. E. J. Mishan, *Technology and Growth: The Price We Pay*. New York: Praeger, 1969, 193 pages.

165. W. E. Moore, *Order and Change*. New York: Wiley, 1969.

166. Wilbert Moore & Robert Cook, editors, *Readings on Social Change*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967.

167. Wilbert E. Moore, *Social Change*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963.

168. Edgar L. Morphet & others, editors, Designing Education for the Future: An Eight State Project. New York: Citation Press, 7 volumes, (105 pages to 372 pages), 1969.

169. Lewis Mumford, The Story of Utopias. New York: Boni & Liveright, 1922 (later paperback edition exists).

170. Claudio Naranjo & Robert E. Ornstein, On The Psychology of Meditation. New York: Viking Press, 248 pages, $7.95.

171. Newsfront editors, The Image of the Future: 1967-2000. New York: Year, Inc., 1968.

172. Jack W. Nickson, Jr., Economics and Social Choice. New York: McGraw-Hill, 1971, 278 pages, $5.95.

173. George A. Nikolaieff, editor, Computers and Society. New York: Wilson, 1970.

174. Howard T. Odum, Environment, Power, and Society. New York: Wiley, 1971, 232 pages, $9.95.

175. Richard Ofshe, The Sociology of the Possible. New York: Prentice-Hall, Inc., 1970, 391 pages, paper, $5.95.

176. William F. Ogburn, Social Change. New York: Huebsch, 1922.

177. Walter Ong, S.J., editor, Knowledge and the Future of Man. New York: Holt, Rinehart & Winston, 1968.

178. George Orwell, 1984. New York: Harcourt, Brace & World, Inc., 1949.

179. Frederick Osborn, The Future of Human Heredity. New York : Weybright & Talley, 1969.

180. William & Paul Paddock, Famine--1975!. Boston: Little, Brown & Company, 1967, 276 pages.

181. Peter Park, Sociology Tomorrow. New York: Pegasus Press, 1969, paper, $1.95.

182. Herbert William Parke, The Delphic Oracle. Oxford: Blackwall, 1956.

183. Vernon L. Parrington, American Dreams: A Study of American Utopias. _______: Russell & Russell, Inc., 1964.

184. Aurelio Peccei, The Chasm Ahead. New York: Macmillan, 1969.

185. Harvey S. Perloff, editor, The Future of the U.S. Government: Toward The Year 2000. New York: George Braziller, 1972, 388 pages, $7.95.

186. Robert M. Philmus, Into the Unknown: The Evolution of Science Fiction from Francis Goodwin to H. G. Wells. Berkeley: University of California Press, 1970, 178 pages, $6.95.

187. John R. Platt, Perception and Change: Projections for Survival. Ann Arbor: University of Michigan Press, 1970.

188. Plato, The Republic. Many editions.

189. J. H. Plumb, The Death of the Past. New York: Houghton, Mifflin, 1969, $5.00.

190. Fred Polak, The Image of the Future. New York: Oceana, 2 volumes, 1961.

191. Fred L. Polak, Prognostics. New York: Elsevier, 1970.

192. Sidney Pollard, The Idea of Progress: History and Society. New York: Basic Books, 1969, $5.95.

193. George Poulet, Studies in Human Time. Baltimore: The Johns Hopkins Press, 1956.

194. Darold Powers & Hilda Powers, The Future Machine. New York: Gordon & Breach, 1972, World Future Society Book series.

195. Robert W. Prehoda, Designing the Future: The Role of Technological Forecasting. Philadelphia: Chilton, 1967, 311 pages, $8.50.

196. President's Research Committee on Social Trends, Recent Trends in the United States. New York: McGraw-Hill, 1933.

197. J. B. Priestley, Man and Time. New York: Doubleday, 1964.

198. Stephen Rauschenbush, Man's Past, Man's Future. New York: Delacourt, 1969, $6.95.

199. George F. Rohrlich, editor, Social Economics for the 1970s. __________: Dunellen Co., 1970, $9.95.

200. Sidney E. Rolfe & Walter Damm, editors, The Multinational Corporation in the World Economy. New York: Praeger, 1970, 169 pages, $10.00.

201. John Rose, Technological Injury: The Effect of Technological Advances on Environment, Life and Society. New York: Gordon & Breach, 1969.

202. Albert Rosenfeld, The Second Genesis: The Coming Control of Life. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969, 327 pages, $6.95.

203. Jean Rostand, Can Man Be Modified? New York: Basic Books, Inc., 1959.

204. Theodore Roszak, The Making of aCounter Culture. New York: Doubleday Anchor Books, 1969.

205. Bruce Russet & others, World Handbook of Political and Social Indicators. New Haven, Connecticut: Yale University Press, 1964.

206. Harold Sackman, Mass Information Utilities and Social Excellence. Philadelphia: Auerbach, 1971, 284 pages, $15.00.

207. Carl Sagan & I. S. Shklavskii, Intelligent Life in the Universe. San Francisco: Holden-Day, 1966.

208. Donald A. Schon, Technology and Change. New York: Delacorte Press, 1967.

209. Edwin M. Schur, editor, The Family and the Sexual Revolution. Bloomington: University of Indiana Press, 1964.

210. S. Prakash Sethi, Up Against the Corporate Wall. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971, 431 pages, $9.95.

211. J. J. Servan-Schrieber, The American Challenge. New York: Atheneum, 1968.

212. Michael Shanks, The Innovators: The Economics of Technology. Harmondsworth: Penguin Books, Inc., 1967.

213. Eleanor Bernert Sheldon & Wilbert E. Moore, editors, Indicators of Social Change: Concepts and Measurements. New York: Russell Sage Foundation, 1968, 900+ pages.

214. Jon M. Shepherd, Automation and Alienation. Cambridge: M. I. T. Press, 1971, 164 pages, $7.95.

215. Robert Silverberg, Son of Man. New York: Ballantine Books, Inc., paper.

216. Carovillanot Skehans, editor, Science and the Future of Man. Cambridge: M. I. T. Press, 1971, 196 pages, $10.00.

217. B. F. Skinner, Walden Two. New York: ________, 1948, 320 pages, paper, $1.95.

218. Gunther S. Stent, The Coming of the Golden Age: A View of the End of Progress. New York: Doubleday, 1969, $4.95.

219. C. P. Snow, The State of Siege. New York: Scribner's 1969, 50 pages.

220. Gerhard Szczesny, The Future of Unbelief. New York: George Braziller, 1961.

221. Gordon Rattray Taylor, The Doomsday Book: Can the World Survive? New York: World, 1970, $7.95.

222. John G. Taylor, The Shape of Minds to Come. New York: Weybright & Talley, 1971, 278 pages, $6.95.

223. Henri Theil, Applied Economic Forecasting. New York: Rand McNally, 1966.

224. Robert Theobald, The Economics of Abundance: A Non-Inflationary Future. New York: Pitman, 1970, 151 pages, $5.95.

225. Robert Theobald, Futures Conditional. Indianapolis: Bobbs-Merrill, 1972, 270 pages, $1.95.

226. Robert Theobald, Habit and Habitat. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972, 277 pages, $8.95.

227. Robert Theobald & J. M. Scott, Teg's 1994: An Anticipation of the Near Future. Chicago: The Swallow Press, 1972, 211 pages, paper, $2.50.

228. Sir George Thomson, The Foreseeable Future. Cambridge, England: Cambridge University Press, revised edition, 1960.

229. Paul Tillich, The Future of Religions. New York: Harper & Row, 1966.

230. Alvin Toffler, Future Shock. New York: Random House, 1970, 505 pages, paper, $1.95.

231. Harry C. Triandis, Attitudes and Attitude Change. New York: Wiley, 1971, 232 pages, $6.95.

232. Louis Turner, Invisible Empires: Multinational Companies and the Modern World. New York: Harcourt Brace, 1971, $6.95.

233. Charles Van Doren, The Idea of Progress. New York: Praeger, 1967, 497 pages.

234. Kenneth Vaux, Subduing the Cosmos: Cybernetics and Man's Future. Richmond, Virginia: Knox Press, 1970, 198 pages, $5.95.

235. Sir Geoffrey Vickers, The Art of Judgment. New York: Basic Books, 1965.

236. Sir Geoffrey Vickers, Value Systems and Social Process. New York: Basic Books, 1968.

237. Heinz von Foerster, J.D. White, L.J. Peterson & J. K. Russel, editors, Purposive Systems: Proceeding of the First Annual Symposium of the American Society for Cybernetics. New York: Spartan Books, 1968, 179 pages.

238. Arend Theodoor von Leeuwen, Prophecy in a Technocratic Era. New York: Scribner's, 1968.

239. Dietrich Von Oppen, The Age of the Person: Society in the 20th Century. Philadelphia: Fortress Press, 1969, $5.50.

240. C. S. Wallia, editor, Toward Century 21: Technology, Science, and Human Values. New York: Basic Books, 1970, 308 pages, $8.95.

241. Robert Wallis, Time: Fourth Dimension of the Mind. New York: Harcourt, Brace and World, 1968.

242. Aaron W. Warner & others, editors, The Environment of Change. New York: Columbia University Press, 1969.

243. Warren W. Wagar, Building the City of Man: Outlines of a World Civilization. New York: Grossman, 1971, 180 pages.

244. Fred Weinstein & Gerald M. Platt, The Wish to be Free: Society, Psyche and Value Change. Berkeley: University of California Press, 1969, 322 pages, $8.50.

245. H. G. Wells, *Anticipations*. New York: Harper, 1902.

246. H. G. Wells, *The Future in America: A Search After Realities*. New York: Harper, 1906.

247. H. G. Wells, *What is Coming? A European Forecast*. New York: Macmillan, 1916.

248. Norbert Wiener, *God and Golem, Inc.* Cambridge: M.I.T. Press, 1964.

249. Norbert Wiener, *The Human Use of Human Beings*. New York: Doubleday, 1954.

250. Leslie A. White, *The Evolution of Culture*. New York: McGraw-Hill, 1959.

251. Henry Winthrop, *Ventures in Social Interpretation*. New York: Appleton-Century-Croft, 1968.

252. Donald A. Wollheim, *The Universe Makers: Science Fiction Today*. New York: Harper & Row, 1971, 122 pages, $4.95.

253. Gordon Wolstenholme, editor, *Man and His Future*. Boston: Little-Brown, 1963.

254. Henry Yaker & others, editors, *The Future of Time: Man's Temporal Environment*. New York: Doubleday, 1971, $10.00.

255. Michael Young, *Forecasting and the Social Sciences*. _________: Heineman Educational Books, 1968.

256. Fritz Zwicky, *Discovery, Invention, Research*. Toronto: The Macmillan Company, 1969.

A Selective Guide to Futures Studies and Futures Research:

Reports and Monographs

1. American Astronautical Society, Planning Challenges of the 70s in the Public Domain. Tarzana, California: American Astronautical Society, 1971, 478 pages, $16.75.

2. Bernice Brown, Delphi Process: A methodology used for the elicitation of opinions of experts. Santa Monica, California: RAND Corporation, Report P-3925, 1968.

3. Harrison Brown, James Bonner, & John Weir, The Next Ninety Years. Pasadena: California Institute of Technology, 1967, 186 pages, $2.45.

4. Canadian Broadcasting Corporation, A Symposium--The Ethics of Change. Toronto, C.B.C., 1968, 77 pages, paper.

5. Norman C. Dalkey, Experiments In Group Prediction. Santa Monica, California: RAND Corporation, Report P-3820, 1968.

6. Norman C. Dalkey, Predicting the Future. Santa Monica, California: RAND Corporation, Report P-3948, 1968.

7. H. T. Darracott & others, Report on Technological Forecasting. Washington, D. C.: Joint AMC/NMC/AFSC Commanders, U.S. Department of Defense, June 1967.

8. Raul De Brigard & Olaf Helmer, Some Potential Societal Developments, 1970-2000. Middletown, Connecticut: Institute for the Future, April 1970, Report R-7, 134 pages.

9. Theodore J. Gordon & Robert H. Ament, Forecasts of Some Technological and Scientific Developments and their Societal Consequences. Middletown, Connecticut: Institute for the Future, Report R-6, September 1969, 98 pages.

10. Olaf Helmer, Systematic Use of Expert Opinions. Santa Monica, California: RAND Corporation, Report P-3721, 1967.

11. Charles De Hoghton, William Page, & Guy Streatfeild, And Now the Future: A PEP Survey of Future Studies. London: PEP, 12 Upper Belgrave Street, SW1, Vol. 37, Broadsheet 529, August 1971.

12. Department of Communications (Canada), Report on the Seminar on the Wired City: Telecommission Study 6(d). Ottawa: Information Canada, 1971, 42 pages plus bibliography (paper).

13. Philip K. Eckman, editor, Technology and Social Progress--Synergism and Conflict. Tarzana, California: American Astronautical Society, 1969, $9.75.

14. Selwyn Enzer, Dennis Little & Frederick D. Lazar, Some Prospects for Social Change by 1985 and Their Impact on Time/Money Budgets. Middletown, Connecticut: Institute for the Future, March 1972, Report S-1-25.

15. House Committee on Science and Astronautics, U.S. Congress, Technology: Processes of Assessment and Choice. Report of the National Academy of Sciences. Washington, D.C.: Government Printing Office, July 1969, 163 pages, $.75.

16. House Committee on Science and Astronautics, U.S. Congress, A Study of Technology Assessment. Report of the Committee on Public Engineering Policy, National Academy of Engineering. Washington, D.C.: Government Printing Office, July 1969, 208 pages, $1.25.

17. Hudson Institute, The Hudson Institute Chartbooks. Croton-on-Hudson, New York: Hudson Institute.

18. Sir Robert Jackson, A Study of the Capacity of the United Nations Development System. New York: United Nations, 1969.

19. Erich Jantsch, Technological Forecasting in Perspective. Paris: OECD, 1967.

20. Michael Marien, Alternative Futures for Learning. Syracuse, New York: Educational Policy Research Center, Syracuse University, May 1971, 223 pages, $5.00.

21. Ralph C. Lenz, Jr., Technological Forecasting. Dayton, Ohio: Aeronautical Systems Division, Air Force Systems Command, Wright-Patterson Air Force Base, Report ASD-TDR-62-414, second edition, June 1962.

22. Arthur P. Lien, Paul Anton & Joseph W. Duncan, Technological Forecasting: Tools, Techniques, Applications. New York: American Management Association Bulletin No. 115, 1968.

23. The Mitre Corporation for the (U.S. Federal) Office of Science and Technology, Executive Office of the President, June 1971: A Technology Assessment Methodology: Project Summary, 30 pages; Some Basic Propositions, 286 pages; Automotive Emission, 181 pages; Computers/Communication Networks, 236 pages; Enzymes (Industrial,)199 pages; Mariculture, 180 pages; and Water Pollution; Domestic Wastes, 301 pages.

24. National Commission on Technology, Automation and Economic Progress, Technology and the American Economy. Washington, D.C.: Government Printing Office, especially Volume 1 (final report, 0-788-561) and Appendix Volume V, Applying Technology to Unmet Needs, 206-574-66, February 1966.

25. National Resources Committee, Subcommittee on Technology, Technological Trends and National Policy. Washington, D. C.: Government Printing Office, 1937.

26. New York Academy of Sciences ANNALS, Environment and Society in Transition. New York: New York Academy of Sciences, 1971, 699 pages.

27. Ronald S. Ritchie, An Institute for Research on Public Policy: A Study Prepared for the Government of Canada. Ottawa: Information Canada, 1971, 95 pages.

28. Richard Rochberg, Theodore J. Gordon, & Olaf Helmer, The Use of Cross-Impact Matrices for Forecasting and Planning. Middletown, Connecticut: Institute for the Future, Report R-10, April 1970, 63 pages.

29. Stanford Research Institute Educational Policy Research Center, Contemporary Societal Problems. Menlo Park, California: June 1971, 46 pages.

30. Stanford Research Institute Educational Policy Research Center, Toward Master Social Indicators. Menlo Park, California: SRI EPRC Report 6747-2, February 1969, 52 pages.

31. Syracuse University Research Corporation, The United States and the World in the 1985 Era. ________, Virginia: Clearinghouse for Federal Scientific and Technological Information, 1964, 4 volumes: 1. "The United States and the World in the 1985 Era." 2. Appendices I & II to 1 preceding. 3. "Science and Technology in the 1985 Era." 4. Appendix to 3 preceding.

32. Raymond Tanter, *Explanation, Prediction, and Forecasting in International Politics*. Ann Arbor: University of Michigan Press, 1969.

33. United Nations, *Provision Report on World Population Prospects: As Assessed in 1963*. New York: United Nations Report ST/SOA/SER. R/7.

34. United Nations, *Studies in Long-Term Economic Projections for the World Economy*. New York: UN Dept. of Economic & Social Affairs, E/3842, ST/ECA/80, 1964.

35. U.S. Department of Health, Education and Welfare, *Toward A Social Report*. Washington, D.C.: Government Printing Office, 1969.

36. U.S. Department of Housing and Urban Development, *Tomorrow's Transportation: New Systems for the Urban Future*. Washington, D.C.: Office of Metropolitan Development, Urban Transportation Administration, May 1968, 100 pages.

37. U.S. National Goals Research Staff, *Toward Balanced Growth: Quantity With Quality*. Washington, D. C.: Government Printing Office, 1970.

38. U.S. Senate Committee on Government Operations, *Full Opportunity and Social Accounting Act*. Washington, D.C.: Government Printing Office, three parts, 1968.

39. Anthony R. Weiner, Richard Farson, Philip Hauser & Herbert Stroup, *The Future of the Family*. New York: Family Service Association of America, 1969.

40. W. Timothy Weaver, *The Delphi Method*. Syracuse, New York: Syracuse University Educational Policy Research Center, June 1970, 160 pages, mimeographed.

41. World Law Fund, *Final Document of the North American Group of the World Order Models Project*. New York: World Law Fund, 1972.

A Selective Guide to Future Studies and Futures Research Articles

1. ____________, "Notes on Leonardo and the future of the past," Art In America, March 1966, pages 33-39.

2. _________, "Outlook on Man's Future," Technology Review, November 1965, entire issue.

3. American Academy of Arts and Sciences, "Towards the Year 2000: Work in Progress," Daedalus, Summer, 1967 (special issue).

4. Raymond Bauer, editor, "Forecasting the Future," Science Journal, 3, October 1967, entire issue.

5. Daniel Bell, "The study of the future," The Public Interest, Volume 1, Fall 1965, pages 119-130.

6. Daniel Bell, "Twelve Modes of Prediction," Daedalus, (American Academy of Arts and Sciences), Summer, 1964, pages 845-880.

7. A. Douglas Bender & others, "Delphic Study Examines Developments in Medicine," Futures, Volume 1, No. 4, June 1969, pages 289-303.

8. Warren G. Bennis, "Future of the Social Sciences," The Antioch Review, Vol. 28, Summer 1968, pages 227-255.

9. Chresten A. Bjerrum, "Forecast of Computer Developments and Applications, 1968-2000," Futures, Vol. 1, No. 4, June 1969, pages 331-338.

10. Nigel Calder, "What is future research?", New Scientist Vol. 36, November 9, 1967, pages 354-355.

11. Marvin Cetron, "Forecasting Technology," International Science and Technology, September 1967.

12. Marvin Cetron, "Using Technical Forecasts," Science and Technology, July 1968.

13. Bertrand de Jouvenel, "Political Science and Prevision," American Political Science Review, Vol. 59, March 1965, pages 29-38.

14. Ithiel de Sola Pool, "Social Trends," Science and Technology, April 1968.

15. Carl Djerassi, "Birth Control After 1984," Science, Vol. 169, September 4, 1970, pages 941-951.

16. Anthony J. Downs, "Alternative Futures For the American Ghetto," *Daedalus*, Vol. 97, Fall 1968, pages 1331-1378.

17. Joseph D. Duncan, "A Framework for Forecasting Socio-Economic Change," *Battelle Technical Review*, Vol. 15, September 1966, pages 9-13.

18. Otis Dudley Duncan, "Social Forecasting--The State of the Art," *The Public Interest*, No. 17, Fall 1969, pages 88-118.

19. Editors of *New York Times Economic Review* (annual feature), "Search for Meaning Amidst Change," June 6, 1969.

20. Jay W. Forrester, "The Counterintuitive Behavior of Social Systems," *Technology Review*, January 1970.

21. Johan Galtung, "On the Future of the International System," *Journal of Peace Research*, 1967.

22. Bertram Gross, "The Coming General Systems Model of Social Systems," *Human Relations*, November 1967.

23. Bertram Gross, editor, "Social Goals and Indicators for American Society," *Annals*, American Academy of Arts and Sciences, June and September 1967, special issues.

24. Olaf Helmer & Nicholas Rescher, "On The Epistemology of the Inexact Sciences," Management Science, Vol. 6, No. 1, October 1959, pages 25-52.

25. Frank S. Hopkins, "The United States in the Year 2000: A Proposal For The Study of the American Future," *The American Sociologist*, Vol. 2, August 1967, pages 149-150.

26. Fred Ikle, "Can Social Predications Be Evaluated?", *Daedalus*, Summer 1967.

27. Andrew Kopkind, "The Future Planners," *American Psychologist*, November 1967.

28. Harold Lasswell, "The Changing Image of Human Nature: The Socio-Cultural Aspect (Future-Oriented Man)," *American Journal of Psychoanalysis*, 1966.

29. Daniel Lerner, editor, "Quantity and Quality," *Daedalus*, Fall 1959, entire issue.

30. Charles Lickson, "Privacy and the Computer," *IEEE Spectrum*, October 1968. (New York: Institute of Electrical and Electronic Engineers).

31. P. J. Lovewell & R. D. Bruce, "How We Predict Technological Change," *New Scientist*, Vol. 13, 1962.

32. John McHale, "World Facts and Trends," *Futures*, September 1971, pages 216-301, and December 1971, pages 385-395.

33. Margaret Mead, "The Future As The Basis for Establishing A Shared Culture," *Daedalus*, Winter 1965.

34. Donald N. Michael, "Some Long-Range Implications of Computer Technology for Human Behavior in Organizations," American Behavioral Scientist, April 1966.

35. Wilbert Moore, "Forecasting the Future," in his book, *Order and Change*. New York: Wiley, 1967.

36. Gunnar Myrdal, "The Necessity and Difficulty of Planning the Future Society," *Bulletin of the Atomic Scientists*, January 1968.

37. William Peterson, "The Future and the Futurist," *Harvard Business Review*, November-December 1967, pages 168-172 and pages 181-186.

38. John R. Platt, "What We Must Do," *Science*, Vol. 166, November 28, 1969, pages 1115-21.

39. Wilbur Pritchard & others, "Communications Satellites and the World of Tomorrow," *Astronautics and Aeronautics*, April 1968, entire issue.

40. James Brian Quinn, "Technological Forecasting," *Harvard Business Review*, March-April 1967, pages 89+.

41. Andrew Schonfield, "Business in the 21st Century," *Daedalus*, Vol. 98, Winter 1969, pages 191-207.

42. M. W. Thring, "The Next Thirty Years in Engineering," *The Advancement of Science*, Vol. 24, September 1967, pages 99-106.

43. Hans Toch, "The Perception of Future Events: Case Studies in Social Prediction," *Public Opinion Quarterly*, Spring 1958.

44. Sir Geoffrey Vickers, "The Uses of Speculation," *American Institute of Planners Journal*, Vol. 34, January 1968, pages 2-10.

45. Kenneth E.F. Watt, "Man's Rush Toward Deadly Dullness--Diversity Is More Than The Spice Of Life," Natural History, February 1972, 7 pages.

46. Max Ways, "Don't We Know Enough To Make Better Public Policies," Fortune Magazine, April 1971, pages 64+.

47. Max Ways, "The Road to 1977," Fortune, Vol. 75, January 1967, page 93.

48. Lancelot Law White, "Recover Values in a New Synthesis," Main Currents in Modern Thought, Vol. 21, No. 1, September/October 1969, pages 3-9.

49. Anthony J. Wiener & Herman Kahn, "On 'Studying' the Future Social Effects of Science," in Encyclopaedia Britannica Yearbook of Science, 1968.

50. D. Wilkes, "The World of 1992," Western Reserve University Law Review, Vol. 18, 1968, pages 1449-82.

51. Henry Winthrop, "The Sociologist and the Study of the Future," American Sociologist, May 1968.

52. Gordon Wills, "Technological Forecasting: The Art and Its Management," Journal of the Market Research Society, Vol. 10, April 1968, pages 87-101.

LEARNING GUIDE SECTION 17:

A Selective Guide to Futures Films

Introduction

In conjunction with this futures studies curriculum development project, an extensive sampling and critical evaluation of pertinent 16 mm. films was undertaken with Mr. Cameron MacCauley, Director, Extension Media Center, University of California, Berkeley, California 94720.

A brief survey article and other useful information based on the EMC study will be published in the October, 1972 issue of the EMC newsletter, Lifelong Learning, Two-72, a copy of which will be sent without charge upon request to the Extension Media Center. Also upon written request to EMC without charge, the EMC Catalog will be sent.

Other useful publications dealing with futures films are:

1. Science Fiction in the Cinema by John Baxter. New York: Coronet Communications Paperback Library, 1970, 237 pages, $1.25, paper.

2. Films on the Future: A Selective Listing, by Marie Martin. World Future Society Book Service, 1971, 33 pages, multilithed, unbound, $2.00.

3. "The 21st Century," a brochure describing the 49 films based on the 1968-1969 CBS TV series narrated by Walter Cronkite, will be sent without charge upon written request to: Sales Service Department, Contemporary/McGraw-Hill Films, 330 West 42nd Street, New York, New York 10036.

Except as otherwise noted below, all films listed here may be rented from the Extension Media Center. (You may also wish to check with other film distributors). Whenever available, the EMC catalog number is given with the listing to facilitate inquiries.

A Selective Listing of Futures Films

1. "00173" (Contemporary/McGraw-Hill, 9 min., color) A surrealistic film about a butterfly which briefly restores humanity to a human robot production line, only to be destroyed for it.

2. "1985" (EMC 7980, 60 min., color) Metromedia Television newsmen cover U.S. ecological Armageddon as pollution finally does us in.

3. Aging: The Search For Eternal Youth. We meet some vibrant senior citizens and watch the wealthy struggle to regain youth.

4. Air. Barry Commoner comments as the air pollution trip unreels. Interesting actual trip down a respiratory tract to see what dirty air does to our lungs.

5. Alone In The Midst Of The Land. (EMC 8234) Ecological version of "The Last Picture Show," as a safety-garment-clad lone figure looks at "old" films in the future to see how pollution destroyed us.

6. America and Americans (EMC 8202). John Steinbeck's personal views on America's past and future, based on his 1966 book.

7. The Arctic: Our Last Chance. Asserts that the Arctic is a world resource and documents struggle for future between oil men and conservationists.

8. Armaments: The War Game. Opens with a simulated nuclear attack on North America, comments by Jerome Bruner, Donald Brennan, concludes with plea for world disarmament.

9. Arts: Exploring Inner Space. Visits a light sculptor, a Moog concert, an experimental film maker, and a new Off-Off Broadway theater company to seek future trends in the arts.

10. Biochemedical Revolution: Moods of the Future. Accepts fact that mood drugs will be used, asserts we must become more discriminating in their use--and in judging users.

11. The Brain: Creating The Mental Giant. Visits brain researchers, Arthur C. Clarke, ponders what large average IQ increase might accomplish in society.

12. But What Do We Do? (EMC 7653). A bright young engineer drops out of the defense research establishment to work for peace.

13. Can We Control The Weather? Documentary tour of research and demonstration programs aimed at extending, improving weather forecasts and ultimately at controlling weather.

14. Chain Of Life. Documents the widespread, permanent disruption of the ecological food chain caused by unknowing, uncaring rape of the natural environment.

15. Cinema: The Living Camera. An interesting tour with experimental film makers, elementary school "producers," and a sequence from film "Square Inch Field."

16. Cities: Living In A Machine. A romanticized, designer's eye view of the wonderful new cities they would like to build.

17. The Cities: To Build A Future. A 1968 CBS-TV documentary showing promising revitalization of downtown Philadelphia, other hopeful developments in urban areas.

18. Communications. ("Projections 70" series, American Educational Films, 24 minutes, color) Sponsored by Standard Oil Company (Ohio). Smorgasbord overview of recent and prospective developments in telephone, computer, other communication forms.

19. Communication: The Wired World. Examines future consequences of current competition between telephone and cable TV to become tomorrow's dominant communication mode.

20. Computer Animation (EMC 7707). A fascinating, guided tour through the field as of 1970, with many examples shown.

21. Concrete Poetry (EMC 7892). An interesting example of how visual and audio effects are used with words as poetry.

22. Cosmic Zoom. A dizzying tour from human scale out to depths of universe, back, down to sub-atomic scale, back. See also Powers of Ten below.

23. Crime: Dye Guns, Lasers, Justice? Deals with future implications both of new anti-crime technology and of underlying causes of crime.

24. Cross-Channel Hovercraft (EMC 7704). We ride across the English Channel, and visit with hover ferry's developers.

25. Distinction of Past and Future. Eminent physicist Richard Feynman gives an extensive but interesting lecture on entropy, thermodynamic laws, and irreversibility of Time.

26. Ecology: The Silent Bomb. Examines some promising current research--collective and personal--on how we may restore environmental quality by conserving environmental resources.

27. Education. ("Projections 70" series, American Educational Films, 25 minutes, color, $25 rental). Sponsored by Standard Oil Company (Ohio). Enthusiastic look at instructional technology hardware.

28. Education: No More Teachers, No More Books. Takes a hopeful look at Seventies when learner-directed learning will replace teacher-directed teaching.

29. Embryo (EMC 8190). We witness the actual development and hatching of a wildfowl chick. Fascinating.

30. Energy: Toward The Age of Abundance. Report on energy growth, the energy gap, and research devoted to closing it.

31. Evolution In Progress. We witness a scientific observation which shows vividly how human pollution shifts natural selection.

32. Family: Lifestyles Of The Future. Examines some interesting alternatives to the traditional primary nuclear family.

33. Flying: From Here to Infinity. Visits Paris Air Show, a 747 flight, and clips from "2001" to suggest the urge for aerial adventure will evolve into new feats of daring.

34. Food. ("Projections 70" series, American Educational Films, 25 minutes, color). Sponsored by Standard Oil Company (Ohio). Tells us that USDA research and the food industry will increase supply, improve quality of food, feed the starving.

35. Food: Surviving The Chemical Feast. Tells us that food industry emphasis on chemicals and technology are posing serious nutrition problems for the future.

36. Free Growth (EMC 8126). Holds that learning occurs in many different ways, and that individual differences must be accommodated.

37. Future and the Negro (EMC 6825). An in-depth, international 1965 panel discussion which remains as timely now as it was then.

38. Future Shock: Crisis in the 800th Lifetime. With commentary by Alvin Toffler, film tells us what it is, and what some people are doing to cope with it.

39. The Futurists (EMC 7426). Walter Cronkite visits with several futurists (1967), who voice their futures concerns.

40. Games Futurists Play. ("21st Century" series, Contemporary/McGraw-Hill, 1968). Watches The City Game and a sensitivity training game, explains games are used by futurists.

41. Genetics: Man the Creator. An absorbing eye-witnes tour of a sperm bank, artificial womb, and most other aspects of the Genetic Revolution.

42. Holography (EMC 7706). A richly informative demonstration and discussion of laser holography 3-D imaging methods.

43. Homo Sapiens (Contemporary/McGraw-Hill, 10 minutes, color). An amusing animated cartoon on man's rise through technology up to his discovery of extraterrestrial intelligence.

44. House of Man--Our Crowded Earth (EMC 7811). Photography and narration explain the links between population growth, resource depletion, and pollution, calls for better planning.

45. Idea of the City (EMC 7435). Economist John K. Galbraith explains how the city has changed, and what we must do about it now.

46. The Industrial Worker (EMC 8135). Confronts the problems of the unskilled and semi-skilled worker rendered permanently unemployable by automation.

47. Industries of the Future. ("21st Century" series, Contemporary/McGraw-Hill, 25 minutes, color). Examines fluidics, materials revolution, micro circuitry, new energy sources.

48. Inside Out (EMC 8306). A New York University professor offers an absorbing contrast between Harlem's Black ghetto schools and the vibrant Philadelphia Parkway School.

49. It's Nation Time (EMC 8347). NET Black Journal documents in gripping fashion the speakers and main themes from the 1970 Pan-African Congress in Atlanta, Georgia.

50. La Jettee (Pyramid Films, 29 minutes, black/white). A French "photo-romance" with English sub-titles which probes some of the paradoxes which time travel would involve.

51. Life Line In Space (Pyramid Films, 13 minutes, color). A NASA kids-show-TV-cartoon hymn in praise of daring space logistic engineers at work in the near future.

52. Machine (Pyramid Films, 10 minutes, color). An imaginative, animated cartoon statement of how men fall into the trap of the technological imperative.

53. Management of Creativity (EMC 7781). Engineering managers and engineering studies speak separately (and often in disagreement) about how students should fit into the engineering establishment.

54. Management: The New Challenges (EMC 7777). Presidents, top managers, and others comment on how corporations must and are trying to respond to pressure for social responsibility.

55. Man Amplifiers (EMC 7713). Several robots under development are demonstrated and discussed.

56. Man and the Second Industrial Revolution. (Contemporary/McGraw-Hill, 19 minutes, color). A 1970 ABC-TV documentary which holds that technology is the key to the future.

57. Man-Made Man (EMC 7423). From the "21st Century" series. Looks at organ transplants, artificial organs, prosthetic devices, and a brain transplant.

58. Mass Transit: Up, Up, and Away. Foresees the demise of the automobile in North America by 2000, examines many mass transit experiments which will speed the funeral.

59. A Matter of Survival (Contemporary/McGraw-Hill, 30 minutes, color). Documents the human trauma in automation in a case example of an accounting supervisor who encounters the computer.

60. Medicine. ("Projection 70" series, American Educational Films, 25 minutes, color). Looks at organ replacement, research into causes of diseases, new medical hardware and personnel, and re-organization of health care delivery.

61. Mental Health: New Frontiers of Sanity. Points out that drugs have gotten mental patients out of asylums, then looks at some promising treatment-in-the-community programs.

62. Mind Of Man (EMC 8079). A long--119 minutes, color--but thoroughly fascinating documentation of current research on the human brain and its links with behavior.

63. Multiple Man (Contemporary/McGraw-Hill, 16 minutes, color). Expo 67's handsome cinematic tribute to the flexibility and magnificent variety of the human species.

64. Multiply and Subdue the Earth (EMC 7748). Film features environmental designer Ian McHarg, illustrating his views as set forth in his fine book, Design With Nature.

65. Music. Film visits with and listens to a number of contemporary non-traditional composers, from John Cage to a composer of biofeedback music.

66. Nude Marathon (EMC 7798). A tasteful, documentary look at this form of sensitivity training, exemplifying the growing human potential movement.

67. Oceans: Living In Liquid Air. A Florida/Carribbean tour with oceanographers and aquanauts showing and discussing their work.

68. Penology: The Keepers of the Keys. After documenting the grim treatment we impose on imprisoned convicts, film looks at some of the promising community rehabilitation efforts, and lets the prisoners say what they think about them.

69. The Physicists: Playing Dice with the Universe. An absorbing intelligible (to the lay person) account of the human drama and deeper significance in the intricate games modern physicists play.

70. Pollution Is A Matter Of Choice (EMC 7762). An NBC-TV White Paper which solidly links pollution to the lives we choose to lead.

71. Population and Pollution (EMC 8137). A somewhat facile but quick overview of the tie between population growth and pollution increase.

72. Poverty: Closing the Gap. A familiar but succinct and well done restatement of the Rich-Poor Gap, why and how we must close it, and what might happen if we don't.

73. Powers of Ten (EMC 8200). Based on Kees Boeke's book, "Cosmic View." Takes viewers from a Miami golf course to the depths of the universe , inside a golfer down to the sub-atomic level, and so back again. Resembles Cosmic Zoom (see Item 22 above)--less elegant but more informative.

74. Privacy: Can You Buy It? A light-hearted film which uses wry humor to document how technology has crept up on us and what that may mean for society.

75. Race Relations: Getting It Together. Quick review of black militancy in the Sixties and prospects for black clout in the Seventies based on votes, dollars--or more violence.

76. Real Revolution: Talks By Krisna-Murti. (EMC 8061) A truly wise and gentle Indian philosopher explains how improved listening and doing are required to deal with war, famine, and poverty.

77. Reflections on Time (EMC 7825). A mystic, dramatic treatment of subjective, objective, and geological time. A fine discussion opener.

78. Religion: Making the Scene. Harvey Cox and others maintain that the search is on in North America for religious ecstasy and transcendence which older denominations cannot offer.

79. Rise of New Towns (EMC 6854). The New Towns philosophy explained by the builder of Reston, Virginia and Columbia, Maryland.

80. Robots Get Smarter (EMC 7708). An industrial robot and two "brighter" experimental robots are demonstrated and discussed.

81. Rotary Combustion Engine (EMC 7787). An enthusiastic but detailed explanation of this revolutionary new power plant.

82. Safe Insect Control: No Silent Spring (EMC 7760). Lengthy discussion of biological (non-chemical) pesticides.

83. Seeds of Discovery (NASA, MRC Films, 26 minutes, color). A bit of NASA puffery narrated by TV actor James Franciscus which nonetheless neatly rounds up some of the space puzzles scientists hope to resolve in this decade.

84. Shape of Films to Come (EMC 7891). Offers looks at experimental films shown at Canada's Expo 67, plus other material.

85. Sirene (EMC 7878). A compelling cartoon allegory which bitterly suggests that man befouls himself with Technology.

86. The Sixth Continent (Contemporary/McGraw-Hill, 28 minutes, color). From the UN Television series, "International Zone." A tour with oceanographers and astronauts coupled with a plea for international control and disarmament of the seas.

87. Smalltown, U.S.A. (EMC 7156). A sentimental, pro-smalltown view which nonetheless manages to raise some questions about its future.

88. Sociobiology: Doing What Comes Naturally. A current film which invites biologists, psychologists, and anthropologists to share the latest research on why men act like men, women like women, and people like people.

89. Space Lab in the Sky. An informative guided tour of models and mockups for NASA's main Seventies space missions: Skylab and the space shuttle.

90. Space Place (EMC 7901). Creative film maker Charles Braverman's fresh statement of an Apollo moon shot.

91. Sports: The Programmed Gladiator. Suggests that blatant and thorough commercialization of organized sports will be completed in the Seventies.

92. Stranger Than Science Fiction ("21st Century" series, Contemporary/McGraw-Hill, 30 minutes, color). An intriguing comparison of old science fiction films and illustrations with recent technological achievements.

93. The Stuff We Throw Away (EMC 8113). A determinedly optimistic account of recent solid waste disposal demonstration programs.

94. Tamer of Wild Horses (Contemporary/McGraw-Hill, 8 minutes, color). A beautiful cartoon which suggests that Technology is Pegasus, a winged horse which threatens to unseat man until he is tamed, then carries him off in glory to the stars.

95. Technology: Catastrophe or Commitment. An illustrated debate on the joys and perils of technology by Buckminster Fuller, Gordon Rattray Taylor (Doomsday Book), and economist Robert Heilbroner.

96. Time Is (EMC 7098). A somewhat dated (1963) but imaginative exposition about Time, using bicyclists, dancers, etc.

97. Tomorrow's Television (EMC 8058). A 1969 PBL program which examines the conflicting interests involved in the development of cable television.

98. Tommorow Today ("21st Century" series, Contemporary/McGraw-Hill, 30 minutes, color). Makes a somewhat narrow pass at the subject of simulation, basically limited to aircraft simulators.

99. Tragedy of the Commons (EMC 8115). Features biologist Garret Hardin in a crisp explanation of his classic essay by the same name (personal cupidity brings collective destruction of the environment).

100. Transportation (Projections 70 series, American Educational Films. Sponsored by Standard Oil Company (Ohio). Examines what's happening in surface transportation, says the automobile is here to stay.

101. The Utlimate Machine ("Life Around Us" series, Time-LIFE Films). A handsome and concise introduction to what a digital computer is, and how men are using and will use it.

102. The Unexplained. Ideal film for opening a futures studies course. A dizzying 56 minute tour along the cliffs between what is known and what is suspected.

103. Universities: Tearing Down The Ivy. An optimistic look at some experimental programs held to be transforming higher education in North America.

104. Urban Systems ("Projections 70" series, American Educational Films, 25 minutes, color). Comes on strong for how the systems engineers can save our cities.

105. View of America from the 23rd Century (EMC 8060). John Gardner uses a futures "put-on" to plead for basic renewal of our social institutions.

106. Water: The Effluent Society. A Canadian look at how the U.S. has fouled up its own waters, and now wishes to grab Canada's.

107. Weather: Who Votes For Rain? A documentary survey of how we hope to extend 24 hour detailed forecasts and five day general forecasts to two-week detailed forecasts--and regulate what happens as well.

108. Waste: Recycling the World. The Chief of the U.S. Solid Waste Bureau shows and tells us about old and new developments in this field.

109. Weird World of Robots ("21st Century" series, Contemporary/McGraw-Hill, 26 minutes, color). Documentary survey of robotics circa 1968 with demonstrations, experts' views, etc.

110. What's New At School? (EMC 8321). CBS-TV offers a sensitive look at how the Open Classroom came to Prairie View School in Devil's Lake, North Dakota.

111. Who Is Oscar Niemeyer? An extensive guided tour of the futuristic city of Brazilia through the eyes of the architect who dreamed it and built it.

112. Who Is: Victor Vasarely? He is the Hungarian-born founder of Op Art, and here he shows and explains what he is about.

113. Work. Economist Robert Theobald, 4-day-week expert Riva Poor, and others explain that jobs are vanishing although work is not.

114. Year of the Communes (EMC 8013). A sympathetic yet objective tour of a cross-section of contemporary American communal experiments, in which the participants speak for themselves.

LEARNING GUIDE SECTION 18:

A Referral Title List of Popular Recordings for Use in Futures Studies

Introduction

If a church bell may fairly be counted a musical instrument, lyric strains reminding us of fleeting time, the future, and Eternity have pealed across the human landscape at least since the Thirteenth Century when monasteries sounded the tidings.

Futures music is thriving at present. Stanley Kubrick's theme for the film "2001"(taken from Strauss' "Thus Spake Zarathustria") is widely used as futures "signature" music. Gustav Holst's "The Planets" also often serves in the same role.

But it may be in popular music that notions of time and the future have their most frequent expression. Casually at hand at the moment, for example, are three albums: Jazz saxophonist, Yusef Lateef's fine composition titled "1984" (Impulse, Stereo A-84); the Steve Miller Band's album, "Children of the Future" (Capitol SKAO 2920), and a funny trifle, "The In Sound From Way Out! Electronic Pop Music of the Future" (Vanguard VSD 79222).

Much "academic," "serious," and "respectable" futures studies and futures research--like the curriculum outlined elsewhere in this report--is based exclusively in reasoned logical analysis. Perhaps this is inevitable--and perhaps not. It may well be that the abstract, intellectualized approach to futures studies to the exclusion of all else is in fact out of tune with significant trends now shaping the human future.

Reason uninformed by sentiment has always been widely suspect in Western Civilization, and certainly in American society. Once it may have been that the "intellectual" could be safely dismissed as "an egghead," "a dreamer," or "an absent-minded professor." More recently, we have seen that the physicist's strange squiggles descend from the clouds shaped like mushrooms. Accordingly, many bright, sensitive young people equate "reason" with all the worst that Technology might do to us--and probably will. Herein lieth one dimension of the Generation Gap: The Fathers know how to get things done, but the Sons feel that most of what is done is wrong.

All of which serves by way of introduction to a listing of popular music titles possibly pertinent to the future which was prepared in 1969. The listing is included because the actual titles given may yield some interesting and diverting student or faculty research *and*--more important--with the hope that it may stimulate further thought and experiment with "futures music"--whatever that may prove to be.

April 1969

A COMPREHENSIVE LISTING OF POPULAR RECORDED MUSIC COMPILED FROM
THE "PHONOLOG" CATALOG IN THE SAN FRANCISCO STATE COLLEGE LIBRARY

(Note: Criteria for inclusion in this listing were the purely intuitive ones of the compiler, based on an inspection of titles. Many titles beginning with the words "If," "I will," "I'll," "I'm gonna," "I'm," and "Keep on" were deliberately excluded, on the grounds that their variety and intrinsic interest were too narrow to justify a commensurate lengthening of the list. Readers interested in these excluded titles should consult the Phonolog which is readily available in many public libraries and major record shops. Many songs are available on multiple disks, of which only one or a few at most are indicated here.)

By David C. Miller

TITLE	CODE
1. Ain't if funny how time slips away	MGM 33 (S) 4530
2. Above the stars	ACO 33 (S) 144
3. Ad infinitum	ATC 33 (S) 1442
4. All my tomorrows	CAP 33 (S) ST-1538
	PLA 33 (S) 2196
	CAP 33 (S) 2196
5. All of my life	MER 33 (S) 61024
6. All the dearly beloved together forever	VIC 33 LOC & 33 (S) ISO-1120
7. All things are possible	CAD 33 (S) 767
8. All tomorrow's parties	VRV 33 (S) 6-5008
9. Amanha (tomorrow)	PHL 33 (S) 50034
~~10~~	LIM 33 (S) 86044
	VRV 33 (S) 6-8676
10. Among the stars	AUF 33 (S) 6142
11. Anticipation	CTP 33 3605 & (S) 7605
12. As long as there's forever	CAP 33 (S) ST-2659
13. As the years go passing by	STX 33 (S) 723
14. As time goes by	VIC 33 (S) LSP-3899
15. Astro guitar	DEC 33 (S) 74337
16. Astrologically incompatible	SBR 33 (S) 1732
17. Automation song	ELK 33 (S) 74020
18. Beginning, The	SAV 33 12103
19. Best is yet to come	COL 33 (S) CS-8669
20. Better times a-coming	EPC 33 24144 & 33 (S) 26144
21. Beyond the blue horizon	KAP 33 (S) 3430
22. Beyond the moon	SAV 33 12018
23. Beyond the stars	LON 33 LL-1417
24. Billion dollar brain (computer)	UAR 33 (S) 5174
25. Blast off	SAV 33 12160

POPULAR FUTURES RECORDS-2

TITLE	CODE
26. Blue planet	ROV 33 & 33 (S) 25322
27. Blues in space	SAV 33 12103
28. Bomb the moon	EPC 33 24249 & 33 (S) 26249
29. Boy with a future	DEC 33 (S) 74045
30. Brave new world	LON 33 (S) PS-44058
31. Bury-it-yourself time capsules	DOT 33 (S) 25880
32. Calling all comets	EP 2416 33 8345 (? company)
33. Call tomorrow	DER 33 (S) 18019
34. Change is gonna come	VRV 33 (S) 6-5007
35. Change of century	ATC 33 (S) 1327
36. Changes	VAN 33 (S) 79269
37. Changing times	CAP 33 (S) ST-2810
38. Changing with the times	CAP 33 (S) ST-2567
39. Chant to the sun	CBS 33 (S) PS-304
40. Child of the moon	LON 45 908
41. Children of the future	CAP 33 (S) SKAO-2920
42. Chopin, new time	EPC 33 (S) 26226
43. Chromatic universe	DEC 33 (S) 79219
44. Chronology	ATC 33 (S) 1317
45. Come tomorrow	ACT 33 (S) 16018 (?ATC?)
46. Come up the years	VIC 33 (S) LSP-3584
47. Cosmic brotherhood	IPE 33 (S) 9164
48. Cosmic consciousness	WPR 33 (S) 21445
49. Cosmic daddy dancer	ARC 33 (S) 593
50. Cosmic music	IPF 33 (S) 9148
51. Cosmic rays	ATC 33 (S) 593
52. Cosmic remembrance	WPR 33 (S) 21875
53. Countdown	COL 33 CL-1775 & 33 (S) CS-8575
54. Crystal ball	ACO 33 (S) 267
55. Daily, nightly	COM 33 & 33 (S) 104
56. Daily planet	FLK 33 & 33 (S) 7-4013
57. Dark star	WBR 45 7186
58. Days of future passed	DER 33 (S) 18012
59. Destination space	LON 33 (S) SP 44040
60. Don't ask for for tomorrow	CAP 33 (S) ST-2788
61. Don't mention tomorrow	EPC 33 24213 & 33 (S) 26213
62. Electronic music	VAN 33 (S) 79286
	VAN 33 (S) 79222
	VAN 33 (S) 79264
CMD	VAN 33 (S) 938
	LIM 33 (S) 86050
63. E.S.P.	COL 33 CL-2530 & 33 (S) 6-8706
64. Eternally	COL 33 CL-2525 & 33 (S) CS-9325
65. Eternity	RPS 33 (S) 6230
66. Eternity's children	TWR 33 (S) ST-5123
67. Eventually	ATC 33 (S) 1317
68. Everyone's gone to the moon	MGM 33 (S) 4394
69. Far side of the moon	CAP 33 (S) ST-2432
70. Fate	VIC 33 (S) ISO-1112

TITLE	CODE
71. Feast at Delphi	WBR 33 (S) 7304
72. Fickle hand of fate	STR 45 793
73. Fields of the sun	ACO 33 (S) 227
74. Fire star	ACO 33 (S) 170
75. Forever afternoon	DFR 33 (S) 18012
76. Fortuna	COL 33 (S) CS-9374
77. Fortunato	IPE 33 (S) 9139
78. Fortune teller	LON 33 (S) PS-493
79. Fourth dimension	LIB 33 (S) 8027
80. From here to eternity	VRV 33 (S) 6-5048
81. Future	CBS 33 (S) 2038
82. Futuristic sounds of Sun Ra	SAV 33 12169
83. Gardens of the moon	CAP 33 (S) ST-1846
84. Gemini	COL 33 CL-2746 & 33 (S) CS-9546
85. Getting ready for tomorrow	SOC 45 767
86. Give me tomorrow	VIC 33 (S) LSP-4021
87. Golden apples of the sun	WK 33 (S) 7222
88. Goodbye is not forever	DOT 33 (S) 25857
89. Here today and gone tomorrow	COL 33 CL-2702 & 33 (S)CS-9502
90. History repeats itself	PFC 33 (S) 74796
91. How can I face tomorrow	DEC EP 2768
92. How long is forever	VIC 33 (S) LSP-3659
93. How many lifetimes will it take	VIC 33 (S) LSP-3693
94. How many more years	CSS 33 1434
95. How soon	VIC 33 (S) LSP-3428
96. Hundred years from now	TMR 33 (S) 5021
97. Hundred years from today	COL 33 CL-2330 & 33 (S) CS-9130
98. I ain't gonna work tomorrow	VIC 33 (S) LSP-2450
99. I can see a new day	COL 33 CL-2257 & 33 (S) CS-9057
100. I'd give a million tomorrows	EPC 33 (S) 26186
101. I didn't know the world would last this long	VIC 33 (S) LSP-3998
102. I don't want to see tomorrow	CAP 33 (S) ST-2118
103. I dreamed of a cowboy heaven	SGE 33 44
104. I dreamed of a hillbilly heaven	CAP 33 (S) 1623
105. I dreamt I died	MER 33 (S) 61158
106. I'd trade all my tomorrows	VIC 33 (S) LSP-2471
107. If tomorrow	ABC 45 10910
108. If tomorrow could be yesterday	DOT 33 (S) 25866
109. If I lose you tomorrow	DOT 33 (S) 25894
110. If I live to be a hundred	DMD 33 (S) 5005
111. If ever I would leave	COL 33 CL-2088 & 33 (S) CS-8888
112. I guess I'll have to change my plans	CAP 33 (S) DT-1919
113. I guess I'll have to dream the rest	COR 33 57165
114. I hate to see the sun go down	VIC 33 (S) LSP-3472
115. I hate to see me go	LON 33 (S) PS-527
116. I hope I lose my memory	IMP 33 (S) 12412
117. I hope, I think, I wish	VIC 33 (S) LSP-3591
118. I hope she's there tonight	HPS 33 (S) 6224
119. I just can't wait	COL 33 KOL-5730 & 33 (S) KOS-2130
120. I just thought of the moon	CAP 33 (S) ST-2577

POPULAR FUTURES RECORDS-4

TITLE	CODE
121. I just want tomorrow back again	VIC 45 47-9579
122. I know I never will	LTD 33 4003 & 33 (S) 8003
123. I know it can happen again	VIC 33 (S) ISO-1099
124. I know that you'll be there	WHL 33 (S) 112
125. I know that you'll come back	KAP 33 (S) 3229
126. I know we'll be together	CRO 33 (S) 20000
127. I know what I want	CHK 45 1194
128. I know where I'm going	VIC 33 (S) LSO-6007
129. I leave the Milky Way	IMP 33 (S) 12171
130. I'll be alright tomorrow	DEC 33 (S) 74767
131. I'll be lucky some day	CAP 33 (S) ST-2851
132. I'll be me	EPC 33 24063 & 33 (S) 26063
133. I'll be on that good road some day	COL 33 CL-2354 & 33 (S) CS-9154
134. I'll be ready when the great day comes	EPC 33 SN-6042
135. I'll cry tomorrow	WBR 45 7176
136. I'll never pass this way again	IMP 33 9356 & 33 (S) 12356
137. I'll remember tomorrow	PZZ 33 (S) 83
138. I'll try again tomorrow	CAP 33 (S) ST-2403
139. I lost tomorrow	MCR 33 2056 & 33 (S) 3056
140. I may be back	LIB 33 (S) 7534
141. I may be wrong but I won't be wrong always	DER 33 (S) 18016
142. I may fall again	DEC 45 31440
143. I may never fall in love with you	CAP 33 (S) SW-2152
144. I may never get to heaven	COL 33 CL-2629 & 33 (S) CS-9429
145. I may never pass this way again	VIC 33 (S) LSP-1885
146. I'm getting ready for tomorrow	IMP 33 (S) 12334
147. I'm going home next summer	HIC 33 126
148. I'm gonna be free ~~ABC 33 (S) 593~~	ABC 33 (S) 593
149. I'm gonna be king	DER 33 (S) 18010
150. I&m gonna build a heaven of my own	PRS 45 405
151. I'm gonna buy a people	JUB 33 (S) 8013
152. I'm shootin' for tomorrow	DEC 33 (S) 74997
153. In another time	VRF 33 (S) 3040
154. Inevitable end	BIN 33 & 33 (S) 8-4262
155. Infinidad	VRV 33 (S) 6-8707
156. Infinity	SAV 33 12048
157. In life, everything passes	KAP 33 (S) 3229
158. Inner space	DHL 33 & 33 (S) 50019
159. In some time	DID 45 240
160. In the ocean of time	EPC 33 24319 & 33 (S) 26319
161. In the valley of the moon	IMP 33 (S) 12105
162. Interstellar overdrive	TWR 33 T and 33 (S) ST-5093
163. In time	TWR 33 (S) ST-5029
164. Into space	LIB 33 3084 & 33 (S) 7005
165. Invaders, The	VIC 33 LPM & 33 (S) ISP-3475
166. I ride to nowhere	DHL 33 (S) 600276
167. I see a change is gonna come	SID 45 927
168. I shall be free	COL 33 CL-1986 & 33 (S) CS-8786
169. I shall be released	WBR 33 (S) 1751
170. I shall go unbounded	VAN 33 (S) 79206

TITLE	CODE
171. I shall miss you	MGM 33 (S) 7000
172. I shall remember	RPS 33 (S) 6295
173. I shall scream	VIC 33 (S) ISOD-2004
174. I took the blues out of tomorrow	SGE 33 16
175. It's almost tomorrow	DEC 33 (S) 74477
176. It's a lovely day tomorrow	DEC 33 (S) 74759
177. It's a new world every day	MGM 33 (S) 4511
178. It's so hard to face tomorrow	SGP 33 46
179. It's tomorrow	EPC 45 5-10123
180. I've got nothing but time	LON 33 (S) PS-442
181. I've run out of tomorrows	TER 33 (S) 5120
182. I want a new day	COL 33 CL-2812 & 33 (S) CS-9612
183. I will always remember	VPT 33 (S) 5700
184. I will always think about you	MER 33(S) 61165
185. I will be home again	VIC 33 (S) ISP-2231
186. I will come to you	LIB 33 (S) 7421
187. I will follow him	ATC 33 (S) 1447
188. I will follow you	ABC 33 (S) 469
189. I will live my life for you	COL 33 CL-2000 & 33 (S) CS-8800
190. I will love you	CAP 33 (S) ST-1761
191. I will take care of you	MER 45 72735
192. I will take you there	CAP 45 2364
193. I will understand	MGM 45 K-13992
194. I will wait for you	EPC 33 (S) 26247
195. Journey to the center of the mind	MST 33 (S) 6112
196. Journey to the stars	LIB 33 (S) 8029
197. Judgement day	VAN 33 & 33 (S) 7-4796
198. Junk age	SAV 33 12185
199. Jupiter, Mars	MGM 33 (S) ISO-1137
200. Just a matter of time	VTF 33 (S) 4003
201. Just beyond the moon	CAP 33 (S) ST-2786
202. Just tomorrow	PAZ 33 (S) 66
203. Kahlil the prophet	BLN 33 (S) 84165
204. Keep your eye on tomorrow	MGM 45 K13908
205. Keeper of time	VRR 33 (S) 1692
206. Kingdom of heaven	ITA 33 (S) 1
207. Kiss tomorrow goodbye	EPC 33 (S) 26247
208. Land of tomorrow	MGM 45 K13804
209. Last of my future	MER 45 72785
210. Later for tomorrow	DUK 45 411
211. Less than tomorrow	CAP 33 T & 33 (S) ST-2200
212. Let me tell your fortune	LIB 33 (S) 7428
213. Life is a constant journey home	SSP 33 (S) 74948
214. Life is a dream	PHI 33 (S) 600251
215. Life is but a moment	COL 33 (S) CS-9652
216. Life is short	ASR 33 (S) 1008
217. Life is too short	VIC 33 (S) 754046
218. Life time	CAP 33 (S) ST-2927
219. Lifetime	PHL 45 4025
220. Life will pass you by	EPC 33 24333 & 33 (S) 26333

POPULAR FUTURES RECORDS-6

TITLE	CODE
221. Line of fate	VAN 33 (S) 79256
222. Little bit later on	DEC 33 (S) 79222
223. Little pink missile	SAV 33 12185
224. Live for tomorrow	COL 33 CL-2081 & 33 (S) CS-8881
225. Look ahead	OKH 45 4-7322
226. Looking into the future	KAP 33 (S) 3462
227. Lost in the mood of changes	SPA 33 (S) 67080
228. Lost in the stars	DEC 33(S) 79120
229. Lost souls of Saturn	LIB 33 (S) 7005
230. Love everlasting	LON 33 (S) PS-191
231. Love gets better with time	DEC [illegible] 2767
232. Love goddess of Venus	LIB 33 (S) 8027
233. Love goes on forever	MER 33 (S) 61120
234. Love me as though there were no tomorrow	CAP 33 (S) ST-2809
235. Love me like there's no tomorrow	CAP 33 (S) ST-2937
236. Love me not tomorrow	AAM 33 (S) 4111
237. Love me now, hurt me later	MNT 33 (S) 18072
238. Love me tomorrow	[illegible] 33 (S) 22
239. Love takes a long time growing	ACO 33 (S) 188
240. Love that lasts forever	VIC 33 (S) SLP-3834
241. Love will endure	VAN 33 (S) 79179
242. Make way for tomorrow	COL 33 OL-6440 & 33 (S) OS-2840
243. Man from Mars	VIC 33 LPT-6000
244. Man without a dream	VRV 33 (S) 6-5010
245. Martians go home	ATC 33 1212
246. Maybe next year	CTI 33 3514
247. Maybe tomorrow	MGM 33 (S) 4586
248. Mechanical world	ODE 33 Z12-44003 & 33 (S) Z12-44004
249. Melody of the stars	COL 33 CL-2574 & 33 (S) CS-9374
250. Million heartbeats from now	VIC 33 (S) LSP-3668
251. Million more tomorrows	PHS 33 (S) 7418
252. Memory for tomorrow	CAP 33 (S) ST-2914
253. Men from mars	VRV 33 (S) 6-8558
254. Mind and time	CTI 33 3569 & 33(S) 7569
255. Mind bender	COL 33 CL-2656 & 33 (S) CS-9456
256. Mind excursion	BUD 33 (S) 5014
257. Mind flowers	MGM 33 (S) 4570
258. Mind gardens	COL 33 (S) CS-9442
259. Mind rocker	ACA 33 (S) 38003
260. Mind transferral	TWR 33 (S) ST-5094
261. More than yesterday less than tomorrow	ABC 33 (S) 638
262. Morning means tomorrow	DOT 33 (S) 25717
263. My destiny	MER 33 (S) 60796
264. My destiny (is this)	TOP 33 (S) 5068
265. My future just passed	DEC 33 8267

TITLE	CODE
266. Mystery of tomorrow	SEP 33 (S) 556
267. My time will come	ATC 45 2077
268. My tomorrow	CHK 45 1150
269. Never a thought for tomorrow	ABC 33 & 33 (S) 522
270. Never is a long,long day	VIC 33 (S) LSP-3852
271. New horizons	COL 33 CL-2785 & 33 (S) CS-9585
272. New time—a new day	COL 33 (S) CS-9671
273. New tomorrow	MGM 33 (S) 4546
274. New world	B.G 45 553
275. Next spring	PZZ 33 (S) 31
276. 1983	CAP 33 (S) ST-111
277. 1984	RPS 33 (S) 6311
278. 1984	IPE 33 (S) 84
279. 1999 A.D.	LIB 33 (S) 8052
280. No me tomorrow	MST 33 56100 & 33 (S) 6100
281. No more tomorrow	AUG 33 (S) 7042
282. No one can live forever	RPS 33 (S) 6188
283. No tomorrow in sight	VIC 33 (S) LSP-3858
284. Nothing can last forever	MGM 33 & 33 (S) 4430
285. Nothing ever changes	FON 33 27555 & 33 (S) 67555
286. Nothing lasts forever	LON 33 11-3497 & 33 (S) PS-497
287. Nothing more to look forward to	ACO 33 & 33 (S) 152
288. Odds against tomorrow	ATC 33 (S) 1334
289. Or lord don't let them drop that atomic bomb on me	ATC 33 (S) 1377
290. Old man time	ABC 33 (S) 465
291. Old year is gone	___ 45 0043 (?)
292. On a clear day you can see forever	VIC 33 (S) LSOD-2006
293. One bridge at a time	VAR 33 (S) 6582
294. One day at a time	VIC 33 LPM & 33 (S) LSP-3395
295. One day next year	VIC 33 LPM & 33 (S) LSP-3691
296. One day soon	VIC 33 LPM & 33 (S) LSP-3424
297. One more mountain	LIB 33 3533 & 33 (S) 7533
298. One more mountain (one more river)	MER 33 20991 & 33 (S) 60991
299. One more mountain to climb	DMD 33 & 33 (S) 5008
300. One of these days	ATC 33 (S) 1424
301. One step beyond	LIB 33 (S) 7239
302. Only forever	CAP 33 (S) ST-1574
303. Only time will tell	DEC 33 (S) 79075
304. Open up them pearly gates	CAP 45 5383
305. Oracle	OSR 45 78
306. Orbit six	CAD 33 (S)753
307. Orbital velocity	ATC 33 (S) 1492
308. Orion	___ 33 & 33 (S) ST-2666
309. Our day will come	CAP 33 & 33 (S) ST-2082
310. Out of time	LIB 33 (S) 7497
311. Outer space	DOT 33 (S) 25880
312. Over the rainbow	VIC 33 (S) LSP-3899
313. Pars fortuna	IPE 33 (S) 9164
314. Past is all the future I see	COL 33 (S) CS-9669
315. Planet Earth	VRF 33 (S) 3015

POPULAR FUTURES RECORDS-8

TITLE	CODE
316. Planet of the apes	PRJ 33 (S) 5023
317. Premonition	BIN 33 (S) 84217
318. Prophecy of love	LIB 33 (S) 14041
319. Prophet, The	MGM 33 (S) 4517
320. Prophet Jennings	BLN 33 (S) 84115
321. Put it off until tomorrow	DEC 33(S) 74792
322. Rise, robots, rise	MST 45 649
323. Sad tomorrows	RPS 33 (S) 6165
324. Shape of things to come	TWR 33 (S) SKAO-5099
325. Solar race	LIB 33 (S) 8027
326. So little ahead	MCR 33 xxx 2157 & 33 (S) 3157
327. Someday	DUK 45 310
328. Someday	ABC 33 & 33 (S) 514
329. Someday	UAR 33 14015 & 33 (S) 15015
330. Someday	COL 33 CL-2698 & 33 (S) CS-9498
331. Someday	COL 33 CL-1996 & 33 (S) CS-8796
332. Someday, one day	CAP 33 (S) DT-2746
333. Someday, some day	IML 45 54065
334. Someday, somewhere	FRA 45 980
335. Someday the rainbow	VIC 33 (S) LSP-2798
336. Some fine day	ATC 33 (S) 2-602
337. Some soon, some day	CDF 33 (S) Z12-44005
338. Some summer day	DEC 33 (S) 74834
339. Some Sunday morning	CAP 33 (S) ST-2389
340. Some sweet day	WBR 33 (S) 1381
341. Some sweet tomorrow	ABC 33 (S) 631
342. Something beyond	LIB 33 (S) 7537
343. Song of Jupiter	MER 33 (S) 90400
344. Song of the moon	ACO 45 6475
345. Song of the universe	CAP 33 (S) 749
346. Sounds of time	ACO 33 (S) 240
347. Space	TPS 33 (S) 9146
348. Space coupe	SBS 45 2545
349. Space flight	SAV 33 12092
350. Space girl	LON 33 (S) PS-442
351. Space jazz reverie	SAV 33 12169
352. Space man twist	BLN 33(S) 84108
353. Space march	COL 33 CL-2708 & 33 (S) CS-9508
354. Space odyssey	COL 33 CL-2775 & 33 (S) 9575
355. Space rock	DOT 33 (S) 25823
356. Space walk	VIC 33 (S) LSP-3833
357. Space walker	WHI 45 269
358. Spaceman's blues	ATC 45 2522
359. Speculation	SAV 33 12137
360. Star children	CBM (S) 104

TITLE	CODE
361. Star in flight	CAP 33 (S) ST-2577
362. Starting tomorrow	DEC 33 (S) 75054
363. Star track	VIC 33 (S) ISP-4058
364. Star trek	PIN 33 (S) 84285
365. Stranded in time	COL 33 (S) CS-9[illegible]14
366. Surface of the moon	LIB 33 3537 & 33(S) 7537
367. T'morra, t'morra'	DEC 33 (S) 79126
368. Take me to tomorrow	[illegible] 45 695
369. Take your tomorrow	COL 33 CL-846
370. Talking atomic blues	COL 33 CL-2334 & 33 (S) CS-9134
371. Tapestry from an asteroid	SAV 33 12169
372. Taurus	ODE 33 Z12-44003 & 33 (S) Z12-44004
373. Taurus, the 20th	ATC 33 (S) 3006
374. Teller of fortune	PTN 33 204
375. Tell me tomorrow	[illegible] 45 249
376. Telstar	LIB 33 (S) 8053
377. Ten thousand tomorrows	VIC 33 LPM-6015
378. Theme from "outer space"	DOT 33 (S) 25547
379. There is life on Mars	ABC 45 10878
380. There'll be another spring	CAL 33 (S) 693
381. There'll be many tomorrows	MNT 45 1023
382. There'll be no tomorrow	COL 33 (S) CS-8798
383. There'll be other times	DOT 33 (S) 2259
384. There'll be some blues tomorrow	VIC 33 (S) ISP-2895
385. There may be tomorrow	MNT 33 (S) 18072
386. There my future goes	CAP 33 (S) ST-2342
387. There's a brand new day on the horizon	VIC 33 (S) ISP-2999
388. There's a great day coming	ABC 33 (S) 432
389. There's always tomorrow	COL 33 (S) CS-9308
390. There's better times a'coming	DEC 33 (S) 74643
391. There's no tomorrow	DOT 33 (S) 25360
392. There will always be tomorrow	[illegible] 45 77878
393. There will be a tomorrow	CAP 33 (S) ST-2823
394. There will be better years	ABC 33 (S) 432
395. There will never be	VIC 33 (S) ISP-3874
396. These things called changes	VRV 33 (S) 6-8675
397. Things are changin'	COR 45 62522
398. Things I wann' do	[illegible] 45 40016
399. Things to come	SAV 33 12020
400. Things to come (shape of)	[illegible] 45 404
401. Third stone from the Sun	[illegible] 33 (S) 6261
402. Three ways from tomorrow	MER 33 (S) 61161
403. Till the end of time	COL 33 CL-2116 & 33 (S) CS-8916
404. Time is after you	COL 33 CL-2790 & 33 (S) CS 9690
405. Time is a thief	ATC 33 (S) 8158

TITLE	CODE
406. Time is tomorrow	KAP 33 (S) 3487
407. Time lock	MCR 33 2128 & 33 (S) 3128
408. Times is new	URA 33 (S) 3014
409. Times they are a-changin'	COL 33 CL-2105 & 33 (S) CS 8905
410. Times to come	AAL 45 1010
411. Time takes time	LON 33 (S) PS-423
412. Time will not wait	KAP 33 (S) 3547
413. Time will pass you by	MAL 45 591
414. Today and tomorrow	COL 45 4-44668
415. Tomorrow (Friml)	VIC 33 (S) LSC-2509
416. Tomorrow (Michaels)	AAM 33 (S) 4140
417. Tomorrow (Turnbull)	RPS 33 (S) 6283
418. Tomorrow (Youngblood)	LVA 45 2097
419. Tomorrow	UNI 33 (S) 73025
420. Tomorrow afternoon	BLN 33 (S) 84180
421. Tomorrow belongs to me	COL 33 OL-6640 & 33 (S) KOS-3040
422. Tomorrow comes	UAR 33 (S) 6632
423. Tomorrow is a long time	VIC 33 (S) LSP-3801
424. Tomorrow is another day	OKH 33 (S) 14115
425. Tomorrow is a window	HBC 45 1455
426. Tomorrow is my turn	MER 33 (S) 60741
427. Tomorrow is soon a memory	ACO 33 (S) 180
428. Tomorrow is the question	CTI 33 3569 & 33 (S) 7569
429. Tomorrow may never care	MTN 33 (S) 639
430. Tomorrow morning (Ebb-Kander)	VIC 33 (S) LSO-1144
431. Tomorrow morning	DEC 33 (S) 79075
432. Tomorrow never comes	CAP 33 (S) ST-2851
433. Tomorrow never knows	VOR 33 (S) 2001
434. Tomorrow night (Coslow-Grosz)	ATC 45 2337 (?#?)
435. Tomorrow night (Wammack)	ATC 45 2337 (? #?)
436. Tomorrow night	ARC 33 (S) 456
437. Tomorrow proper	COL 45 4-44263
438. Tomorrow song	MER 33 (S) 60890
439. Tomorrow waits for today	MCR 33 (S) 3162
440. Tomorrow will be better	XAAM 33 (S) 4118
441. Tomorrow you won't even know my name	AC 33 (S) 215
442. Tomorrow's blues today	COL 33 CL-2693 & 33 (S) CS-9493
443. Tomorrow's calling	LON 33 (S) PS-482
444. Tomorrow's gonna be another day	CHI 33 (S) 101
445. Tomorrow's just another day to cry	KAP 33 (S) 3462
446. Tomorrow's love	LIB 33 (S) 8033
447. Tomorrow's people	CAP 33 (S) ST-2916
448. Tomorrow's tears	SOL 33 (S) 704
449. Tomorrow's women	WHL 45 253
450. Too many tomorrows	COL 33 (S) KS-2900

TITLE	CODE
451. Touch of time	MTN 45 1087
452. Toward a new religion	LIB 33 (S) 7537
453. ~~Toys in time~~Tower of time	FON 33 (S) 6754
454. Toys in time	CAP 33 (S) ST-2763
455. Train for tomorrow	RPS 33 (S) 6248
456. Turn of the century	ACO 33 (S) 223
457. Twenty-first century express	SVA 33 (S) 67090
458. Utopia	BLN 33 (S) 84275
459. Visa to the stars	VAN 45 35051
460. Wait tillnext year	MGM 33 (S) 4433
461. Wait till tomorrow	ACO 45 6417
462. Wait until tomorrow	RPS 33 & 33 (S) 6281
463. Walking in space	VIC 33 (S) ISP-1143
464. Walkin my fortune	KAP 33 (S) 3469
465. Walkin on the moon	VIC 33 (S) ISP-3415
466. Walts of the prophets	CAP 33 (S) ST-1796
467. War of the satellites	LIB 33 (S) 8027
468. What do I want for tomorrow	LON 33(S) PS-528
469. What will tomorrow bring	VIC 33 (S) ISP-3810
470. Whatever will be, will be	COL 33 CL-1720 & 33 (S) CS-8520
471. What's to become of what's left of me	MCR 45 1344
472. Wheel of fortune	CAP 33 (S) ST-2106
473. When April comes again	CAP 33 (S) ST-1192
474. When Gemini meets Capricorn	COL 33 KOL-5780 & 33 (S) KOS-2180
475. When God comes and gathers his jewels	[illegible] 33 (S) 3999
476. When I come home	UAR 33 (S) 6578
477. When I come home to you	IMP 33 (S) 12299
478. When I fall in love	VRV 33 (S) 6-5011
479. When I get home	CAP 33 (S) ST-2108
480. When I get the money made	DOT 45 209
481. When I get the time	ABC 33 (S) 576
482. When I get to the end of the way	MNT 33(S) 74508
483. When I grow too old to dream	ABC 33 (S) 470
484. When I lay down and die	ELK 33 (S) 7203
485. When I leave the world behind	DEC 33 (S) 70934
486. When I move to the sky	GTJ 33 12024
487. When I'm being born again	VIC 33 (S) ISOP-2006
488. When I'm gone	ELK 33 (S) 7310
489. When I'm gone you'll soon forget	IMP 33 (S) 12277
490. When I'm sixty-four	CAP 33 (S) ST-2876
491. When it's all over	UAR 33 (S) 6453
492. When I've passed on	RPS 33 (S) 6253
493. When Johnny comes ~~marching~~ marching home	WBR 33 (S) 89901
494. When love comes to the human race	ATC 45 2360
495. When Messiah comes	COL 33 CL-6610 & 33 (S) OS-3010

POPULAR FUTURES RECORDS-12

TITLE	CODE
496. When my dreamboat comes home.............	ABC 45 10739
497. When school is out this year.............	LIB 33 (S) 7563
498. When spring comes.........................	MER 33 (S) 60007
499. When spring comes around..................	VIC 33 (S) LSP-3938
500. When summer ends..........................	VIC 33 (S) LSP 3301
501. When summer is gone.......................	LIB 33 (S) 7487
502. When the black of your eyes turns to grey	CAP 33 (S) ST-2368
503. When the boys come home...................	DEC 33 (S) 79126
504. When the grass grows green again..........	DOT 33 (S) 25923
505. When the grass grows over me..............	DEC 33(S) 75086
506. When the green berets come home...........	MNT 45 1115
507. When the hour comes.......................	RCX 45 1862
508. When the idle poor become the idle rich..	COL 33 (S) CS-2080
509. When the kids get married.................	VIC 33 (S) LSO-1128
510. When the lights go on again...............	ABC 33 (S) 631
511. When the music's over.....................	ELK 33 (S) 74014
512. When the red, red robin...................	COL 33 (S) CS-8471
513. When the roll is called up yonder........	MER 33 (S) 32004
514. When the roses bloom again................	KOP 33 828
515. When the saints go marching in...........	DEC 33 (S) 78893 & 33(S) DXSB7-173
516. When the ship comes in....................	COL 33 (S) CS-8905
517. When the snow is on the roses.............	VIC 33 (S) LSP-3913
518. When the stars begin to fall..............	CAP 33 (S) DT-2746
519. When the sun comes shinin' thru..........	AAM 45 974
520. When the swallows come back to Capistrano	DXSB7-182
521. When the walls come ~~tumbling~~ tumbling down	DEC 45 32394
522. When the war is through..................	ABC 33 (S) OCS-5
523. When the white lilacs bloom again........	CAP 33 (S) ST-10389
524. When the wind changes....................	IML 33 (S) 50007
525. When the work's all done this fall.......	DEC 33 9105
526. When the world is ready..................	KAP 33 (S) 3561
527. When they ring the golden bells..........	DEC ED 2625
528. When tomorrow comes......................	STX 33 (S) 718
529. When we come of age......................	MGM 33 (S) 3934
530. When we shall meet again.................	FCS 33 (S) 4202
531. When, when, when.........................	DOT 33 (S) 25927
532. When will love rule the world............	ABC 33 (S) OCS-5
533. When will our day come...................	BRU 33 (S) 754130
534. When will the good apples fall...........	CAP 33 (S) SKAO-2821
535. When will the rainbow follow the rain....	COL 33 (S) CS-9622
536. When will the rain come..................	FON 33 (S) 67576
537. When will the torch go out...............	COR 45 62452
538. When you go (Hill-Barratt)...............	TOR 45 358
539. When you go (Shoshana)...................	CO 45 62535
540. When you return..........................	DOT 33 (S) 144

POPULAR FUTURES RECORDS-13

TITLE	CODE
541. When your har has turned to silver	COL 33 CL-586 & 33 (S) CS-8781
542. Where am I going	DEC 33 (S) 74709
543. Where are you going	MER 33 (S) 61082
544. Where are you going little boy	DEC 33 (S) 74694
545. Where are you going with the rain	VIC 33 (S) LSP-3661
546. Where can a man go from here	STX 33(S) 715
547. Where can tomorrow be found	ACO 33 (S) 239
548. Where do I go	VIC 33 (S) LSO-1143
549. Where do I go from here	COL 33 CL-1826 & 33 (S) CS-8626
550. Where do we go from here	VAN 33 (S) 79285
551. Where I'm bound	DEC 33 (S) 74656
552. Where is tomorrow	CAP 33 (S) ST-159
553. Where will you be	EPC 33 (S) 26134
554. Where you gonna go	LIB 45 55992
555. Where you gonna run to now	MTN 33 (S) 667
556. Who are the brain police	VRV 33(S) 6-653
557. Who knows what might have been	COL 33 KOL-5730 & 33 (S) KOS-2130
558. Who needs forever	VRV 33 (S) 6-8679
559. Who needs tomorrow	BN[illegible] 45 557
560. Who will you be tomorrow	DHL 33 (S) 50027
561. Why come another day	VAN 33 (S) 79267
562. Why does it have to change	___ 45 4-44560
563. Why wait until tomorrow	AMY 45 987
564. Will tomorrow be the same	ELK 33 (S) 74023
565. Will you be here tomorrow	VIC 33 (S) LSP-3541
566. Will you be ready for tomorrow	DEC 33 (S) 75009
567. Will you love me tomorrow	IMP 33 (S) 12320
568. Will you remember	VIC 33 (S) LSC-2090
569. Will you remember tomorrow	DEC 33 8664
570. Winds of change	[illegible] 33 (S) 4484
571. Won't it ever be morning	DEC 33 (S) 74998
572. World is waiting	SHR 33 (S) 1538
573. World is waiting for the sunrise	CAP 33 (S) DT-1476
574. World keep pon turning	EPC 33 (S) 26402
575. World keeps going round	RPS 33 (S) 6197
576. Worlds of time	ATC 33 (S) 8143
577. Worst is yet to come	CNT 33 (S) 61097
578. Worst that could happen	SGC 33 91001 & 33 (S) 92001
579. Years from now	JON 45 6002
580. Year 2001	BUD 33 1010 & 33 (S) 5 10
581. You could be born again	PRJ 33 (S) 5031
582. You'll cry tomorrow	WAR 33(S) 6668
583. Yours until tomorrow	VIC 33 (S) LSP-3976
584. Your tomorrow	KAP 45 942
585. You take what comes along	COL 33 CL-2495 & 33 (S) CS-9295
586. You will come back again	RPS 33 (S) 6296
587. You will be loved	VIC 33 (S) LSP-3546

LEARNING GUIDE SECTION 19:

A Referral Title List of Poems for Use in Futures Studies

Introduction

You are the future, the great sunrise red
Above the broad plains of eternity.
You are the cock-crow when time's night has fled,
You are the dew, the matins, and the maid,
The stranger and the mother, you are death.

--Rainer Maria Rilke, 1875-1926

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Yesterday This Day's Madness did prepare
Tomorrow's Silence, Triumph, or Despair:
Drink! for you know not whence you came, nor why:
Drink! for you know not why you go, nor where.

--Omar Khayam, Trans. by
Edward Fitzgerald, 1809-1888

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To speculate about possible futures is to inquire about fresh visions. Rilke and Omar Khayam are two among many clear-sighted poets who since Time out of Mind have addressed themselves to the All, the Nothing, or the Certainly Something which may yet be.

It seems clear that the rising tide of interest in futures studies is grounded in a widely felt discontent with our present circumstances. If the better tomorrows we are grasping so eagerly--even desperately--for are to be truly better rather than merely "different", surely our visions must be refreshed and enlarged. It is in that spirit that this Referral Title List of Poems is offered.

The List was selected from a master list of titles presented in Granger's Index to Poetry, Fifth Edition, edited by William F. Bernhardt, Columbia University Press, Morningside Heights, New York, 1962. The intent was (and remains) to extract and consult all titles which in the reviewer's judgment sounded futures-relevant. The review is now complete through page 323 of the Index, and it is this partial list which is offered here, nearly 800 titles in all. The abbreviated references are those used in the Index, which provides complete references to the original volumes.

Many of the titles included here which to one reviewer sounded futures-relevant will undoubtedly be found not to be so when the actual poem is consulted. Many of the poems referred to probably are trivial, stale, or otherwise unacceptable. It is hoped, however, that some will be found enjoyable or useful in thinking about possible futures, and that this effort will inspire greater interest--perhaps even an anthology--in poetry dealing explicitly with the future.

A Referral Title List of Poems for Use in Futures Studies

Extracted from Granger's Index to Poetry, Fifth Edition, edited by William F. Bernhardt, Columbia University Press, Morningside Heights, New York, 1962. Coded references to poem sources are documented in the reference work cited.

1. A Is For Alpha; Aiken, NePA
2. Above the hills of Time; Tiplady, MaRV
3. The Acorn; Unknown, BoTP
4. Acorns; King, GFA, RAR
5. Across the forest of delay; Charles d'Orleans,LyMA
6. Address to the New Year; Craik, PEDC, PEOR
7. After a hundred years; Dickinson
8. After a time; Davis, NEPoEA
9. After a little while; Randall, CAW
10. After an interval; Whitman, AA
11. The after-comers; Lowell, AA
12. After dark vapours have oppressed our plains; BPN, EMPrPo, ERP, EV-4, EnRP, AtBAP
13. After death; Mason, AnNZ
14. After death; Parnell, AnIV, GTIV, OBVV, OnYI, OxBl, VA, PoFr, TIP
15. After death; Richardson, AA
16. New Year's Day; Lowell, NePoEA
17. Sun Orchids; Stewart, NeLNL
18. Against fulfillment of desire; Unknown, TrGrPo
19. Against fruition; Suckling, NBE
20. Sonnet XXIX; Shakespeare, PeBoSo
21. Against the fear of death; Lucretius, POD, AWP
22. Against time; Untermyer, MoAMpo(1924 ed.)
23. Bird, bird; Derwood, LiTa, PeBoSo
24. Against time and the damages of the brain; Agee, OnAP
25. Immortality; Mitchell, AA
26. Age cannot wither her; Shakespeare, Anthony and Cleopatra, II, EV-1, MaC
27. Evening; Garrison, AA
28. Age in prospect; Jeffers, BLV, BoLiVe, MAP, MoAB, MoAmPo, NeMA
29. Age and youth; Minnermus, AWP, OnPm
30. Ah, flood of life; Kirkconnell, CaP
31. The dream; Markham, OQP, QP-1
32. Death; Aleixandre, CoSP
33. Love, time, and death; Locker-Lamson, HBV
34. Elegy XI; Shenstone, CEP, OBEC, RO
35. Song; Goldsmith, GTIV
36. Rebel mother's lullaby; Leslie, BOL
37. Ah!Sunflower; Blake, AtBAP, AWP, BLV, EG, EiPP,others
38. Change; Coleridge, MoVE
39. Life's brevity; Villegas, TeCS

40. World ruin; Ramsaur, MaRV, MOM
41. Ah!when will this long weary day have end; Spenser, LO
42. The years; Theognis, GrPE
43. Prophets in their time; Longfellow, GrCo-1, WGRP
44. Desire and disillusion; Byron, EPN
45. The Countersign; Unknown, BLG, MDAH
46. The strength of fate; Alcestis, AWP, JAWP, WPB
47. All that was once mine is mine forever; Afanasi, Fet, BoR
48. The builders; Longfellow, BTP, FaFP, IAP, MaRV
49. All beautiful the march of days; Wile, MaRV
50. Epigram:fatum supremum; Unknown, OBS, SeCL
51. All hail the paegeant of the years; Holmes, MaRV
52. Life's brevity; Simonides, OnPM, AnFE, AtBAP
53. All impelled onward alike; Blair, EV-3
54. All is changing now; Goethe, PoFr
55. All is hidden, naught concealed; Robertson, MOM
56. All I do is dole out minutes; Shannon, SiSoSe
57. All lovely things will have an ending; Aiken, CAMO, CMP, ReaPO
58. The fear of dying; Holmes, MiAP
59. All roads lead to death; Unknown, GrPE
60. Universal change; Sophocles, LiTW, OxBG
61. Returning home; Von Eichendorff, OnPM
62. Elegies; IV-1, Propertius, LaP
63. All that's bright must fade; Moore, OxBI
64. All the forms are fugitive; Emerson, WGRP
65. Human progress; Whitman, GrCO-1
66. Life's a jest; Glycon, GrPE
67. The wind is ill; Brinnin, LiTA
68. Prolonged sonnet; Antella, AWP
69. The divine insect; Wheelock, GoYE
70. What the swallows say; Gautier, TFRP
71. Already the slim crocus; Wilde, PCH
72. Already; Spender, FaBoMO
73. Also sprach Zarathustra; Cannon, LlA
74. After? When the hills do; Dickinson, AnNe, OBAV, PIAE, TGAP
75. Alpha and Omega; Myers, OQP, QP-1
76. Always; Apollinaire, AnFP
77. Man; Greenberg, CrMA
78. Always; Morris, OBAV
79. Always comes evening; Howard, DaM
80. Always in the parting year; Lasker-Schuler, TrJP
81. Oxford bells; Sister Maris Stella, GoBC
82. Next, please; Larkin, NePoEA
83. Ambitious dreams; Soolary, TrFP
84. America: A prophecy; Blake, BoW, RO, EnRP
85. America, last hope of man and truth; Bates, PGD
86. Tall ambrosia; Thoreau, PoEL-4
87. An ancient prophecy; Freneau, PAH
88. I shall remember; Carberry, PoNe
89. And in the grave we're safe, surely; Uknown, GrPE

90. In the end of days; Isaiah, TrJP (Bible).
91. Swords and plowshares; Isaiah, GrCo-1 (Bible)
92. When the days shall grow long; Bialik, TrJP
93. Moments; Schwab, TrJP
94. Nor will these tears be the last; Goethe, LiTW
95. Interlude; Davies, MoWP
96. Andromeda; Browning, OBRV
97. And so the day drops by; Tuckerman, AnNe
98. And the star and system rolling past; Tennyson, IMOP
99. Picture show; Sassoon, ChMO, CMP
100. Prelude to definition, I; Aiken, TwAmPO
101. Bible, Micah, IV:1-5, TreF
102. Oracles II; Johnson, VLEP
103. Another generation; Squire, HBMV
104. Another time; Auden, OxBA
105. Another year; O'Hagan, PEDC, PEOR
106. Another year; Norton, PEOR
107. Washington; Goodman, PGD
108. A New Year's promise; Unknown, BLRP
109. Another year is donning; Havergal, PraP, WBLP, BLRP
110. Anticipation; DeTabley, GTBS-D
111. Anticipation; Tosiani, GoYe
112. Time; Scott, BPN, EmBrPo
113..Immortality, XXXII; Unknown, TrFP
114. Roads; Knight, TVSH
115. Apprehension; Fraser, MaRV, OQP, QP-2
116. Apprehension; Unknown, OBVV
117. Approach of Age; Shakespeare, Sonnetts, XII
118. Approach of evening; Croly, IrPN
119. Approach of spring; Clare, ERP
120. Approach of winter; LaForgoe, ANFP, TrFP
121. Approach of winter; Sackville, CoEV
122. Approach of winter; Thomson, OBEC
123, April's coming; Pollard, NLK
124. The archaeologist of the future; Bacon, WhC
125. Caterpillars' conversation; Findlater, DiM
126. Sorry prophet this, a worthless seer; Wordsworth, GrPo
127. Time's changes; Bramston, OBEC
128. As a man soweth; Goethe, MaRV
129. The lost days; Coolidge, PSO
130. Indian summer; Hannum, CAG
131. Boy fourteen; Hall, MuM
132. As I am now, so you must be; Unknown, WhC
133. As I grow old; Malloch, BPP
134. The little man who wasn't there; Mearns, FaFP, FaPON, InME
135. Scene-Shifter Death; O'Neill, NeIP
136. The two armies; Holmes, TCAP
137. Me; DeLamare, FaPON, TiPO (1959)
138. As nature works in all things to an end; Chapman, NBE
139. As night comes on; Wesley, GoYe
140. Song of summer days; Sheard, OCL
141. KoKo's song; Gilbert, EnLi-2(1949), LiTB, PoVP, SiTL
142. As soon as ever twilight comes; DeLamare, SiSoSe

143. Gestures to the dead;Wheelwright, MoVe
144. New Year's resolve; Wilcox, PEOR
145. New Year's prayer; Kramer, PEDC, PraP
146. As the stars go out; MacDonald, MaRV
147. As the twig is bent; Pope, TreF
148. As the world turns; Swift, OTPC(1940), YOAN
149. As the years go by; Wang Wei, Outte Wo
150. Lonely old age, Yuan Chen, PoHN
151. As time goes on; Von Westphalen, AnCL
152. As we get older; Whitlow, FiBHP, LiTM(rev. ed.)OnHM
153. As we grow older; Wells, PoToHe, WBLP
154. Tomorrow; Pedroso, AnCL, PoFr
155. As years do grow; Cecil, EIL, OBSC, PrWP
156. Spring; Thomson, EnSW
157. Choice; Elliott, OQP, QP-2
158. Aspiration; Drennan, IrPN
159. Aspiration; Duggan, JKCP(1955)
160. Aspiration, Ibn Hani, MooP
161. Aspiration; Tabb, LO
162. Aspiration; Thomson, OBVV
163. Aspiration; Wither, MaRV
164. Assured that you are doomed to die; Unknown, OxBG
165. The astral fates; Butler, BeR
166. Astrologer's song; Kipling, MBP, MoBroPo, NeMA
167. Astrology; Stephens, PR
168. The astronomer; Doherty, JKCP(1955)
169. Astronomers should treat of stars and comets; Pindar,PoP
170. The day of judgment; Buchanan, GoTS
171. At common dawn; Ellis, CH
172. At dawn; Fyleman, BoChLi
173. At dawn; Hugo, OnPM, TrFP
174. At dawn; Villa, CoSP
175. At dawn; Williams, FaBoTw
176. At dawn of the year; Klingle, PGD, PSO
177. To his dead daughter; Hugo, TrFP
178. At dawning; Eberhart, OlF
179. At daybreak when the falcon claps his wings; Villon, AWP
180. The dawning of the day; Unknown, OnYl, TIP
181. At early morn; Dismond, PoNe
182. Time; "AE," CAMO, CMP
183. Roosters; Bishop, CrMA, FiMAP, LiTM, NePA, OnHM
184. Waking time; Eastwick, SiSoSe, TiPo(1959)
185. At graduating time; Unknown, DD, PEDC, PEOR, PoRL
186. Two songs in spring; Jones, VOD
187. Night thoughts IX; Young, GrCO-1
188. To retirement; DeLeon, TrJP
189. Brotherhood; Davis, MaRV
190. Our hymn; Holmes, BOHV
191. At sunrise ; Marinoni, PoToHe
192. The voice; Gibson, CV, TCPD
193. There shall be no peace; Jeremiah, WOL (Bible)
194. At the beginning of winter; Unknown, BoFr, TrCh
195. At the beginning of winter, Unknown, WhP

196. At the crossroad; Manger, OnCuPh
197. At the crossroads; Hovey, BAP, BBV(1951), BLP
198. At the dawn; Kipling, MaRV
199. Morningsong; Ibn Gapiroc, TrJP
200. At the edge of the day; Urmy; HBMV
201. Phantoms; McGuire, CAW
202. At the end of the way; Von Heidenstam, AnSL
203. At the end of things; Waite, WGRP
204. The empty soul; Bowie, MaRV
205. The handwriting on the wall; Shaw, BLPA
206. At the New Year; Patchen, AnFe, CoAnAm, TwAmPo
207. The beginning of summer; Po Chu-i, TrCh
208. At the worst; Zangwill, WGRP
209. At waking; Wetherald, CPG
210. At winter's end; Sister Mary Madelane, JKCP
211. At year's end; Wilbur, LiTM(rev.), MiAP, NePA
212. When the hounds of spring; Unknown, BLV, BoLiVe, CoBe
213. Youth of the year; Unknown, BPN, EmBrPo
214. Auld lang syne; Burns, AWP, BCEP, BEL
215. Where there is no vision; Leigh, MaRV
216. Awake!;Rodgers, LiTM(rev.), WaP
217. Awake!;Von der Vogelweide, AWP, JAWP, OnPM, WBP
218. Awake, arise; Unknown, OxNR
219. Awake!Awake!; Ruskin, HBV, PoFr
220. The bells; Young, AA
221. Out of sleep; Curnow, AnNZ
222. On New Year's Day, 1640; Suckling, SiCV-1
223. Awake, mine eyes; Unknown, EIL
224. Awake my mate; Aristophanes, GrR
225. Thirty-first of May; Tennyson, VA
226. Awake thee, my lady love; Darly, HBV, VA
227. Awake, thou wintry earth; Blackborn, HH
228. Awakening of spring; Ku Shih, PoHN
229. To an early plum; Hsieh Hsieh, PoHN
230. Ay, but to die; Shakespeare, Measure for Measure, III-i, BCEP
231. Ay, once I dreamed of an age-wide sea; DeLamare, UmW
232. The baby; Taylor, DD, abr, MOAH, OHIP
233. Baby new to earth and sky; Tennyson, EmBrPo, ENLi-2, EPN
234. Baby's soliloquy; Unknown, PA
235. Resurgam; Bitton, BLRP
236. Sun; Goll, OnPM
237. Ballad of hope and fear; Madge, FaBoMo
238. Ballad of evolution; Allen, ATP(1935)
239. Ban of time; Burgess, InMe
240. Bards of the future; Dobson; PoVP
241. Be always in time; Unknown, OxNR
242. Great Tom; Corbet, OxBoLi
243. O mors aeterna; Gregory, ChMo
244. Be in me as the eternal moods; Pound, LEAP, MAP, MoAB
245. To end her fear; Freeman, OBMV

246. Prosit Neujahr; Santayana, InME
247. Procrastination; Young, AnEnPo, BCEP, EV-3, LPS-3
248. Reign of peace; Thornton, PEDC
249. Beauty, time, and love; Daniel, OBEV
250. The debt; Bates, OQP, QP-1
251. My instant; Leitch, LS
252. Before all time; Namdev, MaRV
253. Power that moves to good; Arnold, GrCO-2
254. Vista; Wilkinson, SBMV
255. Snowflake; DeLamare, AlDL
256. Before I see another day; Wordsworth, NBE
257. Before it is too late; Griffith; MOAH
258. Before it is too late; Sweet, PoToHe(new ed.)
259. Impenitentia ultima; Donson, HBV, POTT, VLEP
260. Triumph of time; Swinburne, EmBrPo, EtPaEn, PoVP,
    ViPa
261. Before spring; Ropes, BoTP
262. Apprehension; Ainslie, OBVV
263. Before the beginning; Rosetti, OBVV, OxBoCh
264. Music; Robinson, UnW
265. Before the ending of the day; St. Ambrose, OlF
266. To poetry and truth; Unknown, TrJP
267. Burden of time; Scott, CPB
268. Prognostication; Raleigh, SiPS
269. People going by; Roberts, GaP
270. Epitaph for the race of man;Millay, I, AmP
271. Oh, lawd, how long?; Unknown, ABF
272. Two voices; Verlaine, TrFP
273. Cassandra speaks; Ronsard; TrFP
274. Song; Davenant, MeLP, MePo, MeRV
275. Before winter; McCreary, MAP
276. Quartrain, Tu Fu, WhP
277. Beforehand; Bynner, HBMV
278. Begin again; Coolidge, MaRV, BLP
279. Begin again; Hall, NePoAM-2
280. Beginning and the end; Unknown, LyMA, PeOS
281. Beginning of Love; Keats, UnPO(1st ed.)
282. Beginning of summer, Po CHU-i, TrCH
283. Beginnings of day; Diaper, BeR
284. Behind me dips eternity; Dickinson, WoL
285. A new year; Shorter, YeAr
286. The new year; Hosmer, GrCO-2
287. Behold the rosy dawn; Drayton, SeCL
288. An epitaph on the death of Nicholas Grimald; ReIE,
    SICE, TriL, TOPP
289. Being to timelessness as it's to time; Cummings,
    NePA
290. Infallibility; Collier, AA
291. Time; Young, BCEP, LPS-3
292. Bellman's good morrow; Unknown, PoLi
293. Bells at midnight; Aldrich, PAH
294. Bells of new year; Field, PGD
295. Bells of youth; Macleod, BOTP, ReTS
296. The oracle, Von der Vogelweide, LyMA
297. Best not to be born; Archias, OnPM

298. Today; Wright, MOM
299. Of late and never; Heywood, TUPP
300. Of birds and birders; Heywood, SiCE
301. Better unborn; Unknown, GrPE
302. Bird watcher; Treece, ReaPo
303. The children's hour; Longfellow, AA
304. This little vigil; Bell, NePoAm
305. Between the traveller and the setting sun; Thoreau, PoEL-4
306. Life; Byron, GEPC
307. At last; Trask, AA
308. Beyond the end; Leverton, NeAP
309. Beyond the final breath; Lorraine, UnW
310. Beyond the grave; Bruner, AlBD, PoToHe
311. The hills of rest; Paine, HBV, MaRV
312. Beyond the last lamp; Hardy, MoVE, PoVP, TwCV
313. Beyond the profit of today; Unknown (new ed.)
314. Beyond the stars; Towne, UnW
315. Bide thou thy time; Newman, GoBC
316. The big clock; Unknown, TiPO
317. Bird of time; Davidson, MOM
318. Bird omens; George, AnGP
319. Birds of omen; Scott, EmBrPo, EnRP
320. Birth and death of pain; Mitchell, PoP
321. Lincoln; Ditmers, HBMV
322. Lines written in the realization that I must die; Howard, DaM
323. The black earth's always drinking; Unknown, GrPE
324. Death forgot; Celan, TrJP
325. I met a seer; Crane, CoBA
326. Blessings on the hand of women!; Wallace, FaFP,Tref, WBLP
327. At dawn; Hugo, OnPM, TrFP
328. Incarnation; Pierce, MaRV, MOM
329. Dream of the world without death; Buchanan, VA
330. Book of the dead; Boker, MOAP
331. I am the past and present and I bear; Hubbell, LiTW
332. Book of the new year; Unknown, PEOR
333. Anacreontic; Herrick, OAEP, OnPM, OxBoLi, WOL
334. On himself; Herrick, ChTr, SeCV-1
335. Born is the babe; Unknown, AnEC
336. Born yesterday; Larkin, HaMV
337. On the prospect of a revolution in France; Freneau, IAP
338. Tale of eternity; Massey, BMEP
339. Fable; Mills, NePoAm
340. Dirge for the new sunrise; Sitwell, AtBAP, MoAB, MoBrPo
341. Gardens; Guillen, CoSP
342. Brave new world; MacLeish, AMP, OxBA
343. Break of day; Neilson, BoAV, BoAU
344. To an unborn pauper child; Hardy, CoBMV, LiTB, PoLFoT

345. St. Brendan's prophecy; Unknown, OnYl
346. Bridge you'll never cross; Kleiser, MaRV
347. Brief life is here our portion; Bernard of Cluny, GrCO-1
348. Bright earth moves in destined grooves; Daiches, SiTL
349. Merry go round; Jenkins, GoYE
350. Mother and son; Cary, MOAH
351. Building for eternity; Sargent, BLPA
352. The moment; Smithyman, AnNZ
353. Borrowing trouble; Burns, BLP
354. This will remain; Kirsanov, TrRV
355. To Delia; Daniel, AtBAP, OBSC, SiCE
356. Of human progress; Lucretius, WOL
357. Fortune is like the moon; Sophocles, OxBG
358. The pioneers; Campbell, BoSA
359. The pilgrim way; Oxenham, QP-1, OQP
360. Immortality; Greenberg, LiTA
361. Mysticism has not the patience to wait for God's revelation; Eberhart, MoPo
362. The kingdom of death; Homer, GrPE
363. By an' by; Unknown, APW, BoAN-1
364. Life is but loss; Southwell, SiCE
365. From the foothills; Hillyer, MOM
366. Procrastination; Young, EPP
367. By the babe unborn; Chesterton, AlDL
368. The months; Unknown, ChTr
369. To a child; Longfellow, FaBoEn
370. The world that contains all is ever moving; Caelia, ReIE, SiCE, ToPP
371. Time and eternity; Caelia, OBSC
372. Calendar; Bynner, NP
373. The calendar; Unknown, PCH
374. Calendar rhyme; Watson, BoTP
375. Call me not back from the echoless shore; Unknown, BLPA
376. Midnight; Morike, AnGP
377. Evening voluntary; Wordsworth, CaAE
378. Time is the fire; Schwartz, LiTA, LiTM, MoAB
379. An answer; Cameron, CPG
380. Can life be a blessing; Dryden, ATP(1935 ed.), ElSeCe, SeCePo
381. Cancel the past; Kettle, GTIV
382. Flowering time; Unknown, LaP, LyMA
383. Cassandra; Aeschylus, GrR
384. Cassandra; Bogan, AnAmPo, LA, MAP
385. Cassandra; Euripides, GrR
386. Cassandra; Jeffers, LiTA, LiTM, NePA
387. Cassandra; Robinson, AmPP, ExPO, LiTA
388. Cassandra; Aeschylus, OxBG
389. Cassandra speaks; Ronsard, TrFP
390. Cassandra's lament; Aeschylus, LiTW
391. Cassandra's song of celibacy; Vicente, AnSpL-1
392. Indifference to fortune; Thomson, OBEC
393. A century of peace; Bilsford, BoHiPo
394. Challenge to youth; Longfellow, MaRV
395. The chance; Holmes, NePoAm-2
396. Chance; Unknown, OxBG

397. Change; Coleridge, MoVE
398. Change; Donne, LiTE, ViBoPo
399. Change; Greville, CoEV, OBSC
400. Change; Howells, AA, OBAV
401. Change; Knister, BoCaPo, CaP, PeCV
402. Change; Kunitz, NP
403. Change; Thornton, CIV
404. Change in the year; Wordsworth, BoTP
405. Change should breed change; William Drummond of Hawthorn, BSV, EBSV, OBEV
406. The change song; Skinner, OCL
407. Changefulness; Abo Ishaw, MOOP
408. Changeless; Clark, NLK
409. Changeless; Divell, OQP, QP-2
410. Changeless; Meynell, VA
411. Changeless shore; Ashy, GoYe
412. Changes; Barter, BoSA
413. Changes, Ibn Saud of Al Cala La Real, MOOP
414. Changing world; JAMI, OnPM
415. The changing year; Roberts, DD
416. Cherchez fortune aillerus; Theognis, GrPE
417. Expectations or Destiny; Stanley, ElSeCe, LbBV, OBS
418. Child of today; Buckham, AA
419. The human plan; Crandall, AA
420. Warning to children; Graves, FaBoCh, FaFP, GTBS-1
421. Fortune's wheel; Euripides, GrR
422. Children of tomorrow; Gale, OQP, QP-2
423. Song of hope; LATHBURY, BLPA, CAIP, MaRV
424. Tomorrow's men; Johnson, GoSl
425. A child's future; Swinburne, BPN, EmBrPo, EnLi-2
426. The child's quest; Shaw, NP
427. Life may change, but it may fly not; Shelley, BPN, EmBrPo, EPN
428. The world's great age begins anew; Shelley, AtBAP, CoEV, ERP
429. Worlds on worlds are rolling ever; Shelley, BPN, EmBrPo, EnRP
430. Of time: eternity; Greville, OBS
431. Prophets in their time; Christus, GrCO-2
432. Chronos, chronos, mend thy pace; Dryden, EXpo, MaPO, PoEL-3
433. Perspective of coordination; Ficke, NP
434. The circling year; Graham, PTA-2
435. Belfast, high street; Column, NePoAm
436. The city of the end of things; Lampman, BoCaPo, VA
437. Clarion call; Unknown, BLRP
438. The road; Schneour, TrJP
439. The clock; Baudelaire, LO, TrFP
440. The clock; Docic, LiTW
441. The clock; Monro, MoP
442. The clock; Scarfe, NeBP
443. The clock; Unknown, McMcAg, OTPC(1946), PCH
444. Clock-a-Clay; Clare, FaPON, LiTB, LoBV
445. A clock; Unknown, OTPC(1946)

446. The clock and dial; Ramsay, CBOV
447. The clock has struck; Tucker, PoP
448. Father is coming; Howitt, FAOV, OTPC
449. The clock shop; Shirk, GFA
450. A clock stopped; Dickinson, AnFE, APA, MAPA
451. The clock struck twelve; Machado, TeCS
452. Clock symphony; Nims, MiAP
453. Clocks; Ginsberg, PIAE, TrJP
454. Clocks; Sandborg, CrMA
455. The clock's song; Lathrop, AA, JKCP
456. The migrant; Babock, NePoAm
457. The closing year; Prentice, LPS-3
458. A cold night; Unknown, SiB
459. A cold wind blows; Brockman, NoCaPo
460. Autumn daybreak; Millay, LaNeLn
461. Cold fall; Eberhart, FiMAP
462. Doom's day; Herbert, NBE, SeCV-1
463. Travel song; Wilson, BoAV
464. Come, break with time; Bogan, ATP(1953), MAP, MoAmPo
465. Dawn; Boguslawski, NeTW
466. The call of the spring; Noyes, SUS, VOD
467. Glad day; Untermyer, TrJP
468. Traveller's ditty; deFord, HBMV
469. Song to death; Escriva, LiTW
470. Come, gentle death; Watson, ElL, SiCE
471. Welcome death; Escriva, AnSpL-1, OnPM
472. The season's Spring; Thomson, TCEP
473. The welcome; Davis, HBV, IrPN, LPS-1
474. Whenness of the which; Unknown, BoHV
475. Come, let us eat and drink today; del Encina, OnPM
476. Come love or death; Thompson, AA
477. Serenade; Unknown, AWP, JAWP, WBP
478. Come slowly, Paradise; Kenyon, AA
479. Come, the wind may never again; Bronte, EnLoPo
480. Come tomorrow night; Mathew, BoAV
481. Marriage song; Abercrombie, BMEP, BrBE
482. Expectation; Wratislaw, VA
483. Thysia XVI; Luce, HBV
484. Coming of the spring; Scott, EBSV
485. The coming of dawn; Dennen, NLK
486. Coming of spring; Howitt, RAR
487. Coming of spring; Muller, PEOR
488. Coming of spring; Perry, DD, HBVY, HH
489. Coming of winter; Pasternak, RuPo
490. The coming of wisdom with time; Yeats, TWP
491. Conscience and future judgment; Stubbs, MaRV, PTA-2
492. A caution to everybody; Nash, NePA
493. The hour glass; Johnson, ElSeCo, EnLoPo, GTBS-W
494. Cool is the autumn wind; LiPO, ChLP
495. The cosmic egg; Unknown, BOHV, LPS-3
496. The cosmic fabric; Polonsky, TrRV
497. Cosmogony; Daiches, LiTM

498. Cosmogony; Rickford, FaBoTw
499. Could man be drunk forever; Housman, EG, EmBrPo, EnLi-2
500. What troubled Poe's raven; Bennett, PA
501. If we understand; Unknown, PTA-2
502. If we understood; Unknown, PTA-2
503. Somewhere; de la Mare, FaPON
504. To my mistress; LockerpLampson, VA
505. Counting the days; Tippett, ChBR
506. Spring in town; Bryant, APW
507. Brotherhood; Trent, PGD
508. Course of time; Pollok, LPS-3, EnSW, EtS
509. Cradle song; Macneice, MBP, MOAB, MoBrPo
510. Cranmer's prophecy of Queen Elizabeth; Shakespeare, Henry VIII, V-v, WGRP, EV-1
511. Creation of the infinite universe; Lucretius, LaP
512. Creed; Markham, BLPA, FaBoBe, FaFP
513. Crickets at dawn; Speyer, PFY
514. Crown of days; Unknown, TrJP
515. Crown the year; Havergaz, PraP
516. The jewels; Clarke, MoAB
517. Crystal gazer; Teasdale, MAP, MoAmPo, NeMA
518. Retractions XII; Cabell, HBMV
519. Cursed be the day; Bible, Jeremiah XX 14-18
520. Curses upon this land; Rostand, StJW
521. Belshazzar's feast; Daniel, TreF
522. Sonnet to Dante; Da Pistoia, AWP
523. Dark brown is the river; Stevenson, AlDL, BoChCi, FaBoBe
524. The dead earth; Sampley, MuM
525. The house of life; Rossetti, BMEP, BPN, EPN
526. New things and old; Madeleva; GoBC
527. Dark is the light of prophecy; McGee, PraNw
528. History; Watson, BMEP
529. Twilight; Lawrence, OBMV
530. The darkness gathers; Soderberg, AnSL, OnPM
531. Day shall yet be fair; Thaxter, MaRV
532. Progress; McCord, ImOP
533. To goddess luck; Pindar, GrR
534. Days; Emerson, AA, AnAmPo, AnFE
535. Dawn; "AE," BEL
536. Dawn; Addington, NV
537. Dawn; Baudelaire, WOL
538. Dawn; Ibn Billita, MOOP
539. Dawn; Boguslawski, NeTW
540. Dawn; Bottomley, BoTP, MBP, MoBrPo
541. Dawn; Buchanan, GTSE
542. Dawn; Butchart; PoMa, PoTo, VOD
543. Dawn; Conford, AV, LoPS
544. Dawn; Crouse, ChIP
545. Dawn; Dudek, PeCV
546. Dawn; Dunbar, GoSl, PoNe
547. Dawn; Euripides,GrR, OxBG
548. Dawn; Fenster, NeTW
549. Dawn; Gilder, LPS-2, SN, HBV

550. Dawn; Ibn Muqana, MOOP
551. Dawn; Kilmer, JKCP(1955)
552. Dawn; Logan, HBV
553. Dawn; "P.S.M.," McCG
554. Dawn; Monro, WGRP
555. Dawn; Montgomery, LS
556. Dawn; Rachel, TrJP
557. Dawn; Rimbaud, AnFP
558. Dawn; Ross, BoCaPo
559. Dawn; Scott, CaP, CPG, MaRV
560. Dawn; Sherman, MAP
561. Dawn; Tanikado, JOLD
562. Dawn; Unknown, OBSC
563. Dawn; Valery, TrFP
564. Dawn; William, MAP, MoAB, MOAP
565. Dawn; Yeats, MaPo, MoVE, NP
566. Dawn on the headland; Watson, HBV
567. Dawn and dark; Gale, BMEP, HBV, TSN
568. Aubade for hope; Warren, MAP, MoAmPo
569. Dawn and night; Gay, BeR
570. Solitaire; Howard, CAG
571. Pilots, man your planes; Jarrell, MOAB, MoAmPo(1950)
572. A hillside farmer; Farrar, HBMV
573. Dawn angels; Robinson, HBV, VA
574. Dawn at flying-fish point; Christensen, BoAv
575. Dawn at Liverpool; Strong, BoAu
576. Dawn at the rain's edge; Auslander, MAP, MoAmPo(1942)
577. Sand paintings; Corbin, AnAmPo, LA, NP
578. Triumph, Bonner, OBAV
579. Omnia somnia; Watson, HBV
580. Rain in the hills; Going, VOD
581. The ice flows; Pratt, CaP, OCL
582. Moods; Sill, BTP
583. Dawn has yet to ripple in; Cane, MAP, MoAmPo, PIAE
584. Dawn in Inishtrahull; O'Sullivan, OnYl
585. Dawn in Londson; Khonov, RuPo
586. Dawn in the cockloft; Tablada, AnMP
587. Dawn in the desert; Scollard, PoT, PoTo
588. Dawn in the Everglades; Warlow, BLA
589. Dawn in the town; Unknown, TeCS
590. Improvisation III; Silverman, TwCaPo
591. Forest boat song; Ford, IHA
592. Wings at dawn; Auslander, HBMV
593. Chanson de Rosemonde; Hovey, HBV
594. Mass of love; Unknown, LiTW, TeCS
595. Dawn of day; Browne, ElL
596. Dawn of peace; Noyes, MaRV, QS
597. Dawn on Lake Katrine; Scott, EV-4
598. Dawn on mid-ocean; Wheelook, EtS
599. Dawn on the East Coast; Lewis, FaBoMo
600. Dawn on the Lieure; Lampman, CaP, OCL
601. Dawn on the Summe; Nichols, PoTE

602. Dawn on the wall-head there; MacLeish, AtBAP
603. Dawn over the mountains; TuFu, OnPC
604. Dawn patrol; Chicago, Durham, GoSl
605. May it be; Pasternak, BoRS, TrJP
606. Dawn song; Von Aist, LyMA
607. Dawn song; Davis, CAG
608. Dawn song to waken the lovers; Unknown, LiTW
609. Dawn song; Ibn Sa'id ofin, MOOP
610. Quaeritur; Kipling, PA
611. Omnes eodem cogimor; Ammianus, OxBG
612. The dawn wind; Kipling, PoT, PoTo
613. The dawning; Vaughan, CAW, EV-2, MePo
614. Dawning of the year; Blake, AA, LBAP
615. Dawning of the day; Mangan, GoBC, TIP
616. Dawning of the day; Unknown, OnYl, TIP
617. Dawns; Kreymborg, MAP
618. Dawn's awake; Bohanan, BANP
619. Nature and man; Wang Wei, POP
620. Day before April; Davis, BoTP, FaPON, GaP
621. Day before Christmas; Chute, ChBR
622. Day begins to droop; Bridges, GrBS-D, MBP, MM
623. The day breaks; Clark, ChlP
624. Prayer for the new year; Richard of Chichester, PraP
625. Paper boats; Tagore, AlDL, FaPON, MCCG
626. Day comes; Tu Fu, OnPM
627. Perturbation at Dawn; Maatuk, LiTW
628. Morning; Tou'manian, ArmLP
629. Daybreak; Shelley, GN
630. In the dusk; Ledwidge, VOD
631. Day is coming; Besant, CenHV
632. Day is coming; Morris, BMEP, BPN, EmBrPo
633. At Castle wood; Bronte, ViBoPo, VLEP
634. Day is dying; Eliot, LPS-2
635. Day is dying in the West; Lathbury, OlF, WGRP
636. Lullaby; Chadwick, BOL
637. Day is here!; Barnes, MPB
638. A song of doubt; Holland, WGRP
639. Lullaby; Coates, BOL
640. Day of coming days; Johnson, POTT
641. Dies irae; Thomas of Celano, AA, CAW, HEV
642. Like a whisper; Ayer, GoYE
643. Apostasy; Mills, NePoAm
644. Sunrise in the hills; Fenollosa, AA
645. Day will bring some lovely thing; Crowell, TiPO(1952)
646. Day will come; Strobel, TBM
647. Day will come; Ehrenburg, BoRS
648. Day will not come; Vinse, AnNoLy
649. A song of faith; Holland, WGRP
650. Day will soon be gone; Michibod, AWP, JAWP, WBP
651. Daybreak, de la Mare, AlDL
652. Daybreak; Ibn Burd, MOOP

653. Daybreak; Longfellow, AnNe, APW, BoTP
654. Daybreak; Shelley, GN
655. Daybreak; Spender, LiTL, POTE
656. Daybreak; Untermyer, NV
657. The daybreak call; Haste, PFE
658. Daybreak in a garden; Sasoon, BoTP
659. Daybreak in the city; Callimachus, OxBG
660. Peace; Whitney, PAH
661. Daybreakers; Bontemps, CDC, GoSl, PoNe
662. Secret temple; Seifert, BAP
663. Sonnets at Christmas; Tate, LiTAL, LiTM, NePA
664. The interpreters; Swinburne, BPN, PoEL-5
665. In summer; Towne, HBMV
666. Time of waiting; Hoidobro, TwSpPo
667. Interlude; Wicox, BLP, BLPA, HBV
668. Half of life gone; Morris, EmBrPo
669. Days of birth; Unknown, MoSLBr
670. Earth; Urepont, NeLNL
671. Days that come and go; Cheney, LBAP
672. Of human progress; Lucretius, WoL
673. When we are no more; Lucretius, LiA
674. Dear if you change; Unknown, CoEV, EnLoB
675. Sea of the years that endureth not; Swinburne, EmBrPo
676. Stumbling, we see the future like a cup; Dreyfus, MOAH
677. Fate; Emerson, BAV, RiBV
678. Take up the wings; Lee, NeTW
679. Delphi; Richmond, NeTW
680. Ascent; Blanden, OQP, QP-2
681. Description of time and the year; Tusser, SiCE
682. Despite time; Shakespeare, Sonnets, CXXIII
683. Destiny; Cowley, MeLP
684. Destiny; Arnold, MaRV, PoToHe
685. Destiny; Crane, GoTP, MAP, NeMA
686. Destiny; Emerson, IAP
687. Destiny; Fletcher, MaRV
688. Destiny; Moirns, AA
689. Destiny; Whittier, AA
690. Destiny of nations; Coleridge, ChER, EnRP
691. Devouring time; Shakespeare, Sonnett XIX, AtBAP
692. Song of the dial; Airey, OQP, QP-2
693. Dialog twixt time and a pilgrim; COEV, MePO, NBE
694. The hearse song; Unknown, ABF, AS
695. Dies ultima; Sherman, LBAP
696. Before dawn, de la Mare, AlDL, ChrBoLe
697. Dirge for the new sunrise; Sitwell, AtBAP, MoAB, MoBrPo
698. The confident scientist; Alexis, OxBG
699. Divination by a daffodil; Herrick, OBS, SeCV-1,SeeP
700. Do it now; Braley, BLPA, FaFP, WBLP
701. Do it now; Unknown, BLPA, FaFP, WBLP
702. We go; Wolfskehl, TrJP
703. My hereafter; De Long, WGRP

704. The present; Proctor, WGRP
705. Do not expect again a phoenix hour; Lewis, LiTB, MBP, MoAB
706. To a boy; Unknown, KiLC
707. Do the dead know what time it is; Patchen, MoAmPo
708. It is coming; Mosher, PEOR
709. I doubt of future foes; Elizabeth I, TVPP, OBSC, LEAP
710. Nirvanna; MacInnes, CPG
711. Description of a summer's eve; White, ERP, OBRV
712. Hope; Munch, AnNoLy
713. Dreams come true; Sophocles, OxBG, GrR
714. Quid sit futurum; Unknown, OxBG
715. Of dust in an hour-glass; Amaltheu, LaP
716. Knell; Chapman, MaRV
717. Dying; Holt, ChIP, PGD
718. Dying child; Clare, EnRP, ERP, TrGrPo
719. The small hours; Bethell, OnPM
720. Dying Hymn; Cary, HBV, LPS-2
721. Dying is sweet; Kuzmin, TrRV
722. Dying men; Shakespeare, Richard III, II-i, MaRV
723. Seeking of self; Ivanov, TrRV
724. The dying year; Hill, PEDC
725. The day of days; Morris, BPN, PoVP
726. Epilogue: Credo; Symonds, LBBV, OBVV, OQP
727. Vision; Johnson, MeRV
728. We break new seas today; Oxenham, OQP, QP-1
729. Each new hour's passage is the acolyte; Douglas, BMEP, MBP, MoBrPo
730. Each pregnant oak...; Darwin, PoP
731. Slave; "H.T.R.", CAG
732. Oxen; Jones, BAP
733. Witches song; Coatsworth, PoMS
734. Early light; Bowes-Lyon, AlDL
735. Early moon; Sandberg, LaNeLA, MOAP, PG
736. Early morn; Davies, CH, PoeT
737. The early morning; Belloc, BMEP, BoTP, GTBS-D
738. Early morning in a glade; Dresbach, NP
739. Early morning meadow song; Dalmon, ALV, CH, HEMV
740. Early mornings; Unknown, AS
741. His delight; a p Ewaloh mai, LiTW
742. Early willows; Watson, BoCaPo
743. Earth abideth forever; Ecclesiastics I, FaPON
744. Immortality; Minski, TrJP, TrRV
745. Earth goes on; Unknown, LPS-1
746. Earth will stay the same; Hill, AnAmPo, LA
747. Life's uncertainties; Ecclesiastes XI-1-10, TreFS
748. Mutability; Wordsworth, BPN, EmBrPo, EnLPo
749. Return of the golden age; Virgil, BeR
750. Sibylline prophecy; Virgil, CAW
751. Doubt not a dream; Sophocles, GrR
752. So frail our life, perchance tomorrow's sun; Tsurayuki, OnPM

753. Elegy for all ages; de Rokka, TwSpPo
754. Elegy on the times; Trumbell, APW
755. Embryo; Townsend, AA, HBV
756. Day's affirmation; Read, FaBoTw, TwCV
757. As day begins to wane; Coleman, BoCaPo, CAP, CPG
758. End of being; Seneca, MaRV, WGRP
759. Doomsday; Wylie, CrMA
760. End of man is death; ibn Ezra, TrJP
761. End of the flower-world; Burnshaw, AnAmPo, LA, TrJP
762. End of the seers convention; Fearing, LiTA
763. End of the world; Bottomley, CH, MBP, MoBrPo
764. End of the world; Kresensky, PSO
765. End of the world; MacLeish, AnEnPo, CoBMV, CoV
766. End of the world; Warr, BoCaPo(1948)
767. End of the year; Su T'ung-po, OnPC
768. The end which comes; Arnold, LoBV
769. Final autumn; Johnson, NAMP, NePA
770. Reveille; Phillpotts, POT
771. Endless; Unknown, OnPM
772. The play; Kenyon, HBV
773. Wisdom of insecurity; Eberhart, NePA
774. Endless self; Unknown, OnPM
775. Enjoy the hour; Horace, BeR
776. Well-packed wisdom; Franklin, StaSt
777. Due north; Low, EAS, HBMV
778. Entropy; Pearce, POP
779. Entropy; Spencer, ImOP
780. So go forth to the world; Clough, BPN
781. Have little care that life is brief; Carmen, HBV, PC, VA
782. So at the last I think we must follow; Heyward, NV
783. Emphemera; Unknown, ChLP
784. Fatum supremum; Unknown, OBS, SeCL
785. Time is a thing; Spencer, MBP, MoBrPo
786. Epitaph I have lived through these times and for 1000 years; Desnos, MiCF

(This guide is based on Granger's Index to Poetry, pages 1-323).

APPENDIX C

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APPENDIX D

PROJECT ADVISORY WORKING GROUP: MEMBERSHIP AND DOCUMENTATION

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May 17,1971

TO: Members, AWG. FROM: Dave Miller, ADVENT Project

RE: Presentation, First Assembly, World Future Society

1. The First General Assembly of the World Future Society was held at the Washington Hilton Hotel, Washington, D.C., May 12-15 1971. More than 1,000 registrants from the United States and abroad participated.

2. As scheduled, Miller presented the ADVENT program and served on a panel on Thursday, 13 May, 2-5 p.m. in the Military Room. Some 175 persons attended this event,which featured five formal presentations and audience discussion. Since the event was concurrent with several others, it is presumed that those present had a special interest in "academic futures" (as it was billed), a presumption borne out by the tenor and quality of inquiry and comment.

3. The ADVENT presentation by intent was very brief (10-15 minutes) but presented from carefully organized and produced flip charts. The critical objective was achieved: The first issue of The ADVENT Letter was distributed to all those present. The Letter (copy enclosed) presents facts about the Program, and explicitly solicits futurists' recommendations in a structured format. We believe that the Letter will in fact result in a flow of useful suggestions, as several were received on the spot.

4. Prior to the meeting, an 8 April 1971 memo similar to the one sent you on 30 March was sent to a list of some 118 college and university faculty members in the U.S. and abroad known to have taught futures courses. The response is gratifying and continues.More than a dozen replies have been received and continue to arrive, including thoughtful contributions from such figures as Elise and Kenneth Boulding; Yehezkel Dror at the Hebrew University, Jerusalem; Franklin Tugwell at Pomona College; Mr. Ellis L. Scott, Georgia-Reliance Symposium; and Dr. R.J. Doyle, University of Windsor.

5. We are now in process of organizing concepts, files and responses, and hope to announce very soon the date of the First AWG Meeting, to be held at San Jose State College. Your sustained interest and support are thoroughly appreciated.

July 15,1971

MEETING ANNOUNCEMENT AND AGENDA, ADVENT ADISORY WORKING GROUP

Date, Time, and Place of Meeting

The First Meeting of the ADVENT AWG will be held on Thursday, July 22, 1971, beginning at 10 AM in the Patio Room, Palo Alto Cultural Center (Old City Hall), corner of Embarcadero Road, Palo Alto. (From Bayshore Freeway, take EMBARCADERO WEST exit and proceed to Newell Road. Center telephone number is 415-329-2366). The meeting will extend through a picnic luncheon served in the park, and will adjourn by no later than 4 PM.

Meeting Agenda

1. Introduction of AWG members and brief reports on their activities related to project purposes. Please come prepared to give a five-ten minute summary of your own relevant work, and to answer questions from other members of the Group.

2. Review and discussion of First Progress Summary(your advance copy is enclosed).

3. Presentation and discussion of the revised ADVENT approach. The basic idea is described in the paper, "Conceptual Framework For Futures Studies: A Pattern Analysis Approach"(your copy is enclosed).Please try to read the paper before the meeting. We need your general comments and reactions, as well as your evaluation of the following specific points: 1.Are all concepts made clear by the paper? 2.In your judgment, are the concepts readily learned? Readily applied? 3. Do you consider the revised approach stronger or weaker than in the form initially proposed? 4.What other approaches should be considered?

4. Presentation and discussion of media packaging alternatives and considerations.

5. Discussion and adoption of procedures for insuring sustained AWG participation in ADVENT project.

6. Other business.

We look forward to seeing you on the 22nd.

PETER L. SHOUP, ADVENT AWG COORDINATOR

July 15, 1971

To: 1. Mr. Peter L. Shoup, Chairman, and
2. Members, ADVENT Advisory Working Group, and
3. Dr. Walter Hirsch, Program Officer, Regional Research Program, Region IX (San Francisco), U.S. Office of Education

From: 1. David C. Miller, Co-Director, ADVENT Project
2. Dr. Ronald L. Hunt, Co-Director, ADVENT Project

Re: First Progress Summary, ADVENT Project

Following is an itemized, chronological summary of activities, progress, and status of the ADVENT Project:

DATE:	ACTIVITY:
15 April 1971	ADVENT proposal is funded as fixed-price grant by U.S.O.E. Grant is awarded to Cybernetic Systems Program, Graduate School, San Jose State College. Grant funding period: 15 April 1971 to 31 August 1972. Grant purpose: Design curriculum for an introductory college-graduate-student level course in futures studies.
April 1971	ADVENT Advisory Working Group is organized, as follows:
	(Note: AWG list is omitted here for purposes of this report. See page D-1 preceding for list.)
April 1971	A roster of 118 college and university futurist faculty members in the United States, Canada, and abroad is developed, and a memorandum outlining ADVENT is mailed with a request for project recommendations.
May 1971	The first issue of The ADVENT Letter is published for special distribution at the first General Assembly, World Future Society, Washington, D.C. and to serve as an immediate response to general inquiries about the project.
May 1971	An account of the ADVENT project is published in the special General Assembly issue of The Futurist, the official publication of the World Future Society, having a worldwide circulation of about 10,000 readers/members.

DATE:	ACTIVITY:
13 May 1971	An invited presentation about the ADVENT project is made at a special session on futures studies in higher education held at the First General Assembly of the World Future Society at the Washington Hilton Hotel, Washington, D.C. Some 175 copies of The ADVENT Letter are distributed with an explicit request for mailed-in comments and recommendations.
June 1971	As a direct result of ADVENT activities, Co-Directors Miller and Hunt accept an invitation to offer a course in futures studies for elementary school teachers in the Fall-Winter semester through the Extension Service, San Jose State College. The class will be held for three hours each week beginning September 28, 1971 at Terman Junior High School, Palo Alto.
June 1971	As a direct result of ADVENT activities,Miller and Hunt are invited to submit preliminary recommendations for a futures studies course designed for graduate and practicing psychologists and psychiatrists in California. No final decision on course scheduling has been reached, but it is expected that the course will be offered next year at a suitable facility by Dr. Murray Tondow, professional futurist and President, Behaviordyne, Inc., Palo Alto.
April July 1971	In response to The ADVENT Letter and other published reports, some 25 futurist college faculty members submit written recommendations,relevant materials, and requests to be kept advised about ADVENT progress. Submissions continued to be received at the rate of one or two per week.
July 1971	A comparative critical analysis is made of futures studies course materials and recommendations and submitted materials representing more than 125 past, present, and planned futures studies course offerings. As a direct result of this review, it is decided that fundamental revision of the conceptual approach proposed initially is indicated. The new approach is developed, and a paper describing it is prepared for circulation and comment.

April 1972

ADVENT Futures Studies Curriculum Project: Fact Sheet

Program purpose. The ADVENT project was established to conceive, design, develop, test, produce, and distribute a set of learning materials for use in introductory futures studies instruction at the graduate level.

Project objectives. Specific objectives of the ADVENT project are:

1. To devise a systematic yet flexible learning approach to futures studies which can be applied to study any issue or topic from the perspective of any discipline in the social and behavioral sciences.

2. To embody this learning approach in a set of multi-media Learning Modules such that the instructor can use any one or all Learning Modules in any sequence.

3. To test and produce these Learning Modules on a continuing basis, adding to the set and revising individual Modules on the basis of feedback received from users.

Project components. Physically, each Learning Module will consist of a 35 mm color filmstrip, a 20-to-30 minute filmstrip narration contained on an audio tape cassette, and a printed Learning Guide. The Learning Guide will reproduce the essential illustrations from the filmstrip and essential narration from the cassette. The Learning Guide further will contain suggested individual and class exercises, a brief elaboration of the concept dealt with, a brief select bibliography, and possibly a few brief reprinted selections relative to the concept.

Conceptually, the Learning Modules will be organized into two program components, the STANDARD STUDY PROCEDURE and the CORE CONCEPT SET.

(Note: This portion of the Fact Sheet is omitted for purposes of this report. See pages 27-37 of this report for a general discussion of the components and Appendix A for a detailed curriculum guide.)

Achievements to date. The ADVENT project has to date achieved the following:

1. The Standard Study Procedure has been designed and written in first-draft filmstrip script form for preliminary testing.

2. Three of the Core Concepts (The Time/Line, Change, Stability) have been designed and written in first-draft filmstrip script form for preliminary testing.

3. The remaining Core Concepts have been outlined.

4. Preliminary testing of the first-draft scripts is proceeding during the Spring 1972 semester with a class of 25 graduate students in the Cybernetic Systems Program at San Jose State College, California.

Future Plans. Scheduled ADVENT objectives yet to be attained:

1. Complete first-draft filmstrip scripts for the remaining Core Concepts.
2. Specify illustrations for filmstrips.
3. Draft Learning Guides for each Learning Module.
4. Prepare and submit final report on the design phase of ADVENT.
5. Revise and complete filmstrip scripts for all Learning Modules.
6. Prepare illustrations for all filmstrips and Learning Guides.
7. Prepare master prints and master tapes for all Learning Modules.
8. Publish and distribute Learning Modules for use.
9. Revise and extend set of Learning Modules.

Objectives 5 through 9 immediately above will be attained during 1973 and (Objective 9) on an ongoing basis thereafter.

Sponsorship and management. The design phase of the ADVENT project (Achievements to date and Objectives 1 through 4 under Future Plans above) is funded by a grant from the U.S. Office of Education Regional Research Program, Region IX, Dr. Walter Hirsch, Director. Grant was issued to the graduate Cybernetic Systems Program at San Jose (California) State College, directed by Professor Norman O. Gunderson.

APPENDIX E

Class Roster
Cybernetic Systems 204
Futures Studies Survey (Experimental)
Cybernetic Systems Program
California State University, San Jose
Spring Semester, 1972

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O. Leon Crain
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APPENDIX F

Textbook Evaluation Form With Results
Cybernetic Systems 204
Futures Studies Survey (Experimental)
Cybernetic Systems Program
California State University, San Jose
Spring Semester, 1972

(Note: In addition to the basic evaluation results reported here, the textbook evaluation form also provided space for students' open-ended comments which for reasons of space are not included here--eds.)

TEXT: Futures Conditional, Robert Theobald, editor, Bobbs-MerrillPublishing Company, Indianapolis, Indiana. (Pre-publication edition, mimeographed.)

Introduction:

The author of the text has set before us a series of objectives in the preface. We hope that you will react to each of the objectives with your frank comments. The question asked in this analysis is a simple one. Did the book do what it said it would do? If so, why? If not, why?

Objective One:

"This book is designed to help you perceive your future more vividly. It has been written because we can, for the first time, choose the future we desire."(Did it?)

ACHIEVED? YES 70 % NO 30 %

Objective Two:

"I am aware that it is unusual for an author or editor to state his subjective views. The academic is supposed to be objective and dispassionate. I personally do not believe that such a stance is possible. I believe that each of us has his own biases and beliefs and that the best we can do is to state them clearly."

ACHIEVED? YES 80 % NO 20 %

Objective Three:

"Part One of the book suggests the various ways in which the future can be seen." (Did it?)

ACHIEVED? YES 100 % NO 0 %

Objective Four:

"Part Two collects a selection of the materials being printed about the future. These will permit you to begin to find for yourself in your own life other material which will aid you in looking at the future." (Did it?)

ACHIEVED? YES 50 % NO 50 %

Objective Five:

"Part Three sets out a number of ways in which you can yourself participate in imagining the future. It is based on the reality that the future cannot be taught but can only be experienced." (Did it?)

ACHIEVED? YES 60 % NO 40 %

Objective Six:

"Part Four provides tools and resources which will help you in your process of invention." (Did it?)

ACHIEVED? YES 70 % NO 20 %

UNCERTAIN 10 %

Objective Seven:

"There are no slick answers in this book. The reader must participate: he cannot absorb knowledge like a sponge. If this work is used in class - whether as an introductory course in American history or American values or an advanced course on the future - the students must work together to draw out the meaning. Anybody reading it alone will not find readymade analysis either. Often he will find it helpful to talk to others about the issues raised by the book." (Did it work?)

ACHIEVED? YES 80 % NO 20 %

Objective Eight:

"This book is in a profound sense a Rorschach test, helping you to understand the principles on which you act today. It can also be a learning book, permitting you to deepen your ideas about the way the future is created and the impact your own life can have on that future." (Is it, did it?)

ACHIEVED? YES 30 % NO 40 %

UNCERTAIN 30 %

APPENDIX G

Course Evaluation Analysis
Cybernetic Systems 204
Futures Studies Survey (Experimental)
Cybernetic Systems Program
California State University, San Jose
Spring Semester, 1972

(Note: The following fifty-item course evaluation form was completed by students during the last week of class and was returned by sixteen of the twenty students enrolled in the course.This evaluation analysis is presented in two sections. Immediately below the evaluation form as administered is reproduced, together with an itemized percentage summary of student responses.Following this analysis is a complete record of all students' written comments solicited on and provided on the evaluation form--eds.)

Instructions

Use a text marking pencil. No name is required. Please check the following most appropriate answers and provide frank comments where requested. A form is also provided for a general reaction to the course and recommendations for its improvement.

Reply code

A = AGREE

B = DISAGREE

C = UNDECIDED

Part I: Course Objectives	%A	%B	%C
1. The objectives of the course were clearly stated.	75	13	12
2. The students understood the course objectives.	50	25	25
3. The instructors understood the course objectives.	75	13	12
4. The course objectives were met by the instructors.	44	--	56

A = AGREE
B = DISAGREE
C = UNDECIDED

	%A	%B	%C
5. The course objectives were met by the students.	25	13	62
6. The text complemented the course objectives.	53	19	19
7. The course met my objectives	50	6	44
8. I would have appreciated a more clearcut statement of objectives at the beginning of the course.	19	50	32
9. The objectives of the course were unrealistic.	--	75	25
10. My objectives in taking the course were not clear.	25	62	13
11. My objectives in taking the course were realistic.	75	6	19
12. I took the course more for exploration of the field than for professional specialization.	88	12	--
13. There was a good matching of the course objectives and my own in taking the course.	25	31	44
14. I would be interested in pursuing the field further as a result of taking the course.	84	--	6
15. This course has satisfied my curiosity about futures studies	19	62	19

Part II: Course content

	%A	%B	%C
16. The content presented by the instructors was relevant to the objectives of the course.	38	6	50
17. The content was clearly presented.	50	13	38

A = AGREE
B = DISAGREE
C = UNDECIDED

	%A	%B	%C
18. There was a clearly definable content to the course.	31	13	56
19. I felt the course material wandered and was not clearly defined.	31	31	38
20. The presentations on the ADVENT modules were understandable.	75	6	19
21. The ADVENT modules made sense to me.	63	6	31
22. The ADVENT forms were applicable to my better understanding of futures planning.	50	25	25
23. I feel I can now use the ADVENT system in my own futures planning.	38	25	37
24. The content of the text matched the content of the course.	31	24	25
25. Student presentations were an important contribution to the content of the course.	75	6	19
26. The ADVENT modules were not relevant to the objectives of the course.	13	56	31
27. The science fiction readings were worthwhile efforts in the understanding of the content of the course.	81	6	13
28. The use of clippings and current articles helped to contribute significantly to the content of the course.	56	25	19
29. We could have done without the text without taking away from the content of the course.	43	38	19

A = AGREE
B = DISAGREE
C = UNDECIDED

	%A	%B	%C
30. We should have spent more time analyzing the content of the science fiction readings.	88	12	--

Part III: Course instruction:

	%A	%B	%C
31. The instructors were qualified to teach the course.	88	--	13
32. The instructors were willing to meet with students on development of their studies.	94	--	6
33. I felt that the course was well planned and presented.	25	13	56
34. The team approach in the presentation of the course was worthwhile.	94	6	--
35. The instructors seemed to be in conflict with the objectives of the course.	6	56	31
36. The instructors demonstrated good planning and preparation.	50	6	38
37. There was an openness in the class that encouraged discussion.	94	--	6
38. Instruction brought out my better learning qualities.	19	31	50
39. I would like to go on with my studies in the futures field as a result of this course.	88	--	12
40. The course, content, and instruction merged well as a unit.	25	13	62

A = AGREE
B = DISAGREE
C = UNDECIDED

Part IV: Course evaluation

	%A	%B	%C
41. The evaluation procedures in the course were clear to me.	38	38	24
42. The methods of evaluation were consistent with the objectives of the course.	31	13	56
43. I know my grade now.	25	44	31
44. We had too much work and not enough feedback.	44	31	25
45. I feel that I did my best work in this class.	31	19	50
46. I believe that I am now qualified to engage in futures studies with professional accomplishment.	6	56	38
47. Evaluation of student reports was well handled and provided for growth of understanding of the subject.	50	13	31
48. It was a worthwhile experience	94	--	6
49. I would rate the course as being in the top 25 percent of those I have taken in my college career.	44	--	50
50. Multi-media presentations by students were the highlight of the course.	56	6	31

General Reactions To The Course

1. "I originally took this course with the idea that I would learn future prediction techniques such as the Delphi method, etc. I was disappointed when we did not cover these things."

General Reactions To The Course (continued)

2. "At times I had trouble following the content of the course because I was never really clear on the course objectives."

3. "What bothered me most was that you read the ADVENT modules to us. I felt rather insulted as a graduate student. I felt that the time could have been better used in class discussion."

4. "I liked the student project idea."

5. "The course as a whole was worth taking."

6. "This was a good chance to get our 'feet wet' in the field of futures. It has proven to be a valuable experience in making presentations in that we felt free to make mistakes, knowing that we would receive honest evaluations. The course certainly prepares one for doing the background 'spade-work' in putting together a presentation on futures."

7. "The best course in Cybernetic Systems. More multi-media efforts by students would benefit the entire program."

8. "Would definitely be interested in the advanced futures studies course in the fall."

9. "Good--gave me food for thought."

10."Would like futures studies advanced course. Enjoyable course. Smaller class would have been better."

11."I enjoyed the course but I would have liked to see more emphasis placed on the science fiction readings and clippings on possible future innovations. This I thought was going to be done, but didn't materialize. I did enjoy the presentation even though it was a traumatic experience. I would like to see more emphasis on future worlds rather than trying to develop tooling."

12. "A worthwhile experience that introduced me to much relevant information and thinking. I think that many (my own also, possibly) student projects were way off the beam and without much merit. Flexibility was good but more direction could have been used."

General Reactions To The Course (continued)

13. "Mixed--enjoyed multi-media presentation, especially my chance to work with a media, i.e. a film other than the written word."

14. "Since my background is primarily in the 'hard' sciences, the looseness of the course format was difficult to overcome."

15. "Although the content of the course was not what I expected, I feel that what we were exposed to was worthwhile and interesting. The multi-media presentations were a good technique and useful experience."

16. "The general atmosphere during class meetings had just about the right mixture of formality and informality."

17. "The clippings idea was good."

18. "It is difficult to know at present whether course value can be rated. I think it is one of those courses that the information may seep into use at a later time."

Recommendations For Course Improvement

1. "Go through at least one complete ADVENT series of forms on any "Pattern" to show the alternatives of methods and the example of at least one qualified method."

2. "More emphasis should be placed on student reports. The ADVENT series should be completed before it is used as a script presentation. The articles(with exchange) should be used more often. The text evaluations were too wordy and too lengthy."

3. "Include forecasting methods. More class discussions on readings, especially the science fiction. The Forecaster and Observer forms should have been done at least once prior to the final, so the students would know what they were doing. More feedback on assignments."

4."Get rid of the text--it is only one person's opinion. Better to have selected readings or development of selected authors."

Recommendations For Course Improvement (continued)

5. "Expose students to some of the tools and techniques that have been employed, not with the intent of becoming skilled in their use, but to gain knowledge about their application and limitations."

6."The text contributed little to the course. I am undecided about ADVENT, but found parts of the forms, particularly Form II, overly redundant."

7."Interested in advanced course."

8."Less emphasis on Theobald--more discussion of science fiction readings and newspaper clippings. More emphasis on multi-media contributions to study of the future--and more time allowed to prepare presentation!"

9."One or two weeks should be devoted to a formal presentation of futures theory. This would be a useful foundation for course development."

10. "Assuming the ADVENT forms do not take up as much time in the future, more time should be devoted to critiquing news articles and science fiction stories. An attempt should be made to keep garbage (unknown how) out of the student presentations."

11. "Refinement of present format, i.e. presentations, science fiction reading, and roundtable discussions."

12. "There should have been more feedback about our weekly assignments. The readings should have been more directed. That is, some science fiction is not relevant to the course. The outside readings should have been discussed further.

13. "More class discussion on reading."

14. "Studio or lab for creative prediction attempts."

APPENDIX H

A Prototype Filmstrip Script For

Learning Module One
Entitled

STANDARD STUDY PROCEDURE: INTRODUCTION

First Of Fifteen Modules In A
Futures Studies Curriculum Guide
As Presented In
Appendix A To This Report

Script One

0. The narration which follows accompanies the Filmstrip marked *Learning Module One*, *Part I*.

1."'Cheshire Puss,'" Alice began, 'would you please tell me which way I ought to go from here?'

2. "'That depends a good deal on where you want to get to,' said the Cheshire Cat.

3. "'I don't much care where,' said Alice.

4. "'Then it doesn't much matter which way you go,' said the Cheshire Cat."

5. If *you* 'don't much care where' *you're* going--if you're not interested in or concerned about future possibilities, then the ADVENT Program is not for you. But if you *are* interested in and concerned about *alternative futures*, we may have something for you.

6. *Alternative* futures. What may that term mean? it means that the bounds of the human imagination are unknown. How many *different* possible futures can we *imagine*? Or *hope* for? Or *fear*? Or *believe* in? Or *plan* for? How many? Who can say? Yet, certainly, many, *many* more than we ever *shall* or even ever *could* experience as *actualities.*

7. Perhaps there may be such a time as "*The* Present." But there cannot be in the same sense such a time as "*The* Future." Whatever all may occur in times yet to come will at most be an infinitesimal fraction of all that *might* happen. The *actual* future will be realized from among many possible *alternative* futures.

8. But if we can hope to foresee only *alternative* futures--and never the *actual* future--why should we be concerned about futures at all? Or *should* we?

9. ADVENT's answer to that fundamental question is a firm "YES." We believe that human beings have some real and important *choices* at our disposal about the *actual* future which in time will emerge from existing *alternative* futures. We believe that it is important to discover our choices, to weigh them, and to make them as wisely as we can.

10. If you share this fundamental conviction about alternative futures and the actual future, then ADVENT deserves your careful attention and deliberation.

11. Let's begin at the beginning. Granted that we *want* to probe alternative futures, how do we *begin*? Shall we gather at the Mad Hatter's Tea Party to dine on fortune cookies and read the tea leaves? Or is there a better way?

12. Ever since human civilization began, men and women have struggled to gain some view of possible futures through two different yet equally clouded windows in the human mind. The mind's two magnificent windows are *intuition* and *reason*.

13. Intuition...The ancient oracles of Sumer, of Greece, of Rome. The truth-speaking Prophets of the Old Testament. The Prophet Allah. The I Ching. The prophetic visions of Christendom.

14. Intuition. An ancient, fruitful, and inspiring window in the mind through which men have tried always to foresee possible futures. A tradition honored to this day in astrology--and in the prophetic pronouncements of our experts and leaders.

15. The second great window of the mind through which we try to foresee the future is the window of reasoned conjecture. This window, too, draws on our most ancient traditions.

16. Men first learned to sail on Earth's ancient seas by forecasting the regular movements of the very stars across Earth's ancient skies.

17. Men learned to make the Earth bear fruit and grain by forecasting the passage of the seasons, the flooding and receding of the Nile.

18. Since ancient days, we have known and made use of the fact that some future events can be foreseen, sometimes even when we have no clear ideas as to why things happen when and as they do.

19. Intuition and reason...Two ancient windows in the mind through which humanity has always looked to foresee possible futures so that we can at least prepare for what may yet be, and perhaps even to help shape what may be.

20. The ADVENT Program offers you concepts and tools which you can use to explore possible alternative futures through Reason's window. The Program consists of two broad divisions, each of which may be used with or without the other.

21. One basic component of the ADVENT Program consists of a set of Core Concepts. Each Core Concept represents a fundamental idea which can be applied in probing possible futures for any topic whatsoever. The Core Concept Learning Modules available are shown here. This set is suggestive, not definitive. As you go along, you should consider developing your own Core Concepts. In the meanwhile, ADVENT offers you a set to begin with.

22. The second basic component of the ADVENT Program is the Standard Study Procedure. The ADVENT Standard Study Procedure is presented in this Learning Module and in the next one, Learning Module Two. Here again, the Standard Study Procedure is offered only as a helpful first step. As your study extends, you should develop your own futures studies methods. In the meanwhile, the ADVENT Standard Study Procedure offers you a way to begin.

23. Physically, ADVENT is provided as a series of separate, free-standing Learning Modules. You are using Learning Module One. Each Module includes four fifteen-minute filmstrips, an audio cassette for narration, and a Learning Guide. You may begin with any Module and proceed in any sequence you choose for as long as the Program is useful to you.

24. Now let's begin discussing the Standard Study Procedure, which is covered in this Learning Module and in Learning Module Two. Here is a practising futurist, hard at work. He is studying his racing form diligently before placing his bet on the next race. This futurist appreciates fully how worthwhile it is to make accurate forecasts.

25. Only one horse can come in first in any race, despite the fact that any horse might win. Out of these many alternative futures, the betting fan can win only if he bets on that alternative future which proves to be the actual future.

26. The horse fan needs to make accurate forecasts in order to win at the track. Since every bettor wants to win, nearly every bettor uses a system in making his betting forecasts. There are many systems for forecasting horse races--none of them particularly good. Yet every bettor is convinced that some system is better than no system.

27. A horse race is only one among an infinite number of topics--serious or otherwise--for which alternative futures can be studied. But the principle always holds: In studying alternative futures, some system is nearly always better than no system.

28. The ADVENT Standard Study Procedure is one system which can be used in studying alternative futures. The Standard Study Procedure is one way to begin learning, a take-off point from which you can develop your own system. Use it--or not, depending on whether you find it helpful. But in any case, you will need to use some system in studying alternative futures.

29. FORESIGHT THROUGH INSIGHT. "FORESIGHT THROUGH INSIGHT" is the basic principle on which the ADVENT Standard Study Procedure is based. What does "Foresight Through Insight" mean? It means simply that the more clearly and completely you understand the present, the better prepared you will be to conjecture about alternative futures.

30. Here's a crowd of fans at the football game. In exactly sixty seconds from now, the gun will sound ending the game. If you've ever been to a football game, you can use your experience and insight to make an accurate forecast about this crowd.

31. Here are four alternative forecasts about the behavior of that football crowd during the next thirty minutes. In your opinion, which forecast is the most accurate?

(SLIDE: 1. They'll go to sleep.
2. They'll strip.
3. They'll leave.
4. They'll stay in seats.)

32. Here's the same stadium thirty minutes later. Was your forecast accurate? The chances are great that you did select the accurate forecast because you probably do have experience and understanding about what happens at football games. If you were correct in this example, you have already learned how to apply the principle of foresight through insight in forecasting alternative futures.

33. Now, here's a review of this filmstrip.

34. There are two great windows of the mind through which since ancient times men have tried to foresee the future--the window called intuition and the window called reason. Both windows are important. The ADVENT Program looks through the window called reason.

35. The ADVENT Program offers you two basic components through which you can explore alternative futures. One component is a set of Core Concepts. The other component--presented in this Learning Module and in Learning Module Two--is a Standard Study Procedure.

36. The ADVENT Standard Study Procedure is founded on the basic principle of FORESIGHT THROUGH INSIGHT. "Foresight through insight" means simply that by increasing our knowledge and understanding about the present we improve our ability to speculate and forecast about alternative futures.

37. The ADVENT Standard Study Procedure is only one way to study alternative futures. Like the horse betting fan, however, everyone who is seriously interested in studying alternative futures requires some system. The Standard Study Procedure may be one useful place to begin. As you go along, you should develop your own methods for studying alternative futures.

38. That concludes this filmstrip. The next filmstrip is marked Learning Module One, Part II. It begins the discussion of the ADVENT Standard Study Procedure with the concept of the Observer. The narration which accompanies this next filmstrip is contained on the remaining portion of this audio cassette. Please turn the tape off now until the next filmstrip is ready for viewing.

Script Two

0. The narration which follows accompanies the filmstrip marked Learning Module One, Part II.

1. "'Who are you?' asked the Caterpillar.

2. "'I--I hardly know, Sir,' Alice replied, rather shyly.

3. "'What do you mean by that?', said the Caterpillar sternly. 'Explain yourself.'"

4. In the preceding filmstrip, we discussed the importance of having a system or a method to use if we are serious about studying alternative futures. In the ADVENT Program the method offered is called the Standard Study Procedure.

5. The ADVENT Standard Study Procedure is based on one fundamental principle--foresight through insight. That is, the better we understand how something is now, the better we are able to foresee how it might be in alternative futures.

6. Foresight through insight. One excellent way to improve your knowledge, understanding, and insight about any topic or pattern is to observe it systematically and then make a careful and complete report about what you have observed. This method--systematic observation with careful reporting--is the method used in the ADVENT Standard Study Procedure.

7. Here is a pattern. Begin now to observe it as carefully as you can. You will have about ten seconds to observe this pattern in order to see if you can identify it in your own mind.

8. Now here's a longer-range view of the pattern. Now you can see clearly what it is--a small section of redwood fencing in a sunny California garden. Did you identify the pattern correctly? Let's consider the basic factors in this and in every other observation.

9. First, there is the Observer--that's you.

10. Secondly, there is the Pattern. That's the subject or topic being observed--in the example, the small section of redwood fencing.

11. And third, there is the Environment--that is, the context or the setting or whatever surrounds the Pattern--in this case the rest of the fence and the garden.

12. The Observer, the Pattern, and the Environment. These are the three basic factors which must be considered in every observation.

13. The single purpose and objective of the ADVENT Standard Study Procedure is to offer you a way to enlarge and improve your studies of alternative futures by helping you learn how to observe the present more carefully and more critically. That is why in the Standard Study Procedure the Observer is you. You are always the observer.

14. As the Observer, you have several critical decisions to make. Your first decision, naturally, is to decide what you will observe--that is, to select your topic or Pattern for study. The Standard Study Procedure is only a process tool. The Standard Study Procedure can be used to study any topic or Pattern, but the Procedure never dictates what topic or Pattern you must observe. That is your decision.

15. We need an example study topic or Pattern to use in explaining the Standard Study Procedure. We have chosen a Standard Example study topic or study Pattern which is used for purposes of illustration in all ADVENT Learning Modules. We have chosen a convenient and familiar Pattern for this purpose, the Primary Nuclear Family.

16. The term "Primary Nuclear Family" refers to a household which consists of a father, a mother, and their children. This is only one among many kinds of family forms. But it is a convenient and familiar Standard Example Study Topic or Study Pattern to use in presenting ADVENT concepts.

17. For discussion purposes, then, we will assume that you have made your first decision, and that you have decided to observe the Primary Nuclear Family. As the ADVENT Observer, your second decision task is to clarify the exact nature of your interest in this Pattern.

18. Different ADVENT Observers may be interested in the same topic or Pattern for quite different reasons. Shown here, for example, are three different parties who might well be interested in studying alternative futures of the Primary Nuclear Family.

(SLIDE: 1. Furniture manufacturer.
2. College freshman.
3. Sociologist.)

19. ...and here are three quite different interests which the three different parties just mentioned might have in studying alternative futures of the Primary Nuclear Family.

(SLIDE: 1. Consumption patterns.
2. Family lifestyles.
3. Professional interest.)

20. ...and here are three quite different hoped-for gains which the three different Observers might desire or expect as a result of studying alternative futures of the Primary Nuclear Family.

(SLIDE: 1. Sell more furniture.
2. Prepare for marriage.
3. Improve theories.)

21. If we put all this together as in this table, we have a clear sample comparison which shows how it is that different ADVENT Observers may be interested in studying the same topic or Pattern for quite different reasons.

(SLIDE:

Party	Interest	Hoped-for Gain
1.Furniture manufacturer	1.Consumption patterns	1.Sell more furniture
2.College freshman	2.Family lifestyles	2.Prepare for marriage
3.Sociologist	3.Professional interest	3.Improve theories

)

22. After selecting a Pattern for observation and clarifying your interest in the Pattern, your third decision task as an ADVENT Observer is to plan and execute your actual observation of the Pattern.

23. The Standard Study Procedure only requires that you as the Observer make a systematic observation. The Procedure does not dictate what method or means of observation you must use. And the Procedure does not dictate how much time and effort you should invest in your observation. The Procedure says only that an observation must be made. The other decisions are yours to make.

24. Pursuing our earlier example, shown here are typical methods and levels of effort which might be invested in observing the Primary Nuclear Family by the furniture maker, the college freshman, and the sociologist. The point is that different Observers may use quite different methods of observing and may invest many different amounts of time and energy in their observations--even on the same topic or Pattern.

(SLIDE:

1. Furniture manufacturer: Make a 7-month, $65,000 door-to-door consumer survey of 13,000 households.
2. College freshman: During freshman year, read two books on family life, discuss marriage for an hour or so now and then with friends.

24 (continued).

3. Sociologist: Make a 3-year, role-taking simulation study of the family, supported by 7 graduate students with 250 subjects participating.)

25. Sooner or later by whatever method used, your observation will be complete. Your next task--the fourth decision task as an ADVENT Observer--is to make a series of critical judgements about your Pattern, based on your observation.

26. Here are the eight basic questions which must be answered in completing your fourth decision task as an ADVENT Observer. These eight basic questions must be answered no matter what topic or Pattern you have observed.

(SLIDE:

1. What period of time was considered?
2. What were the environmental boundaries?
3. What are the Key Elements
4. For each Key Element, what are its Key Attributes?
5. For each Key Element, what are its Key Relations?
6. What are the Key Pattern/Environment Interfaces?
7. What are the Key Environmental Resources?
8. What are the Key Environmental Constraints?

)

27. ADVENT FORM ONE is a standard Observation Report Form used to record the Observer's answers to these eight basic questions. ADVENT FORM ONE is discussed in Learning Module Two. At this point, however, let's use our Standard Example Pattern to illustrate what these eight basic questions mean, and how they might be answered.

28. Let's use the case of that furniture maker. He's interested in the consumption patterns of the Primary Nuclear Family because he wants to sell more furniture in the future. Let's see how the furniture maker as an ADVENT Observer might answer our eight basic questions.

29. This is how the furniture maker might answer the first two basic questions.

(SLIDE:

Q1. Time period considered?
A1. The last ten years.
Q2. Environmental boundaries?
A2. The United States.)

30. ...and these are plausible replies to the third basic question.

(SLIDE:
Q3. Key Elements in Primary NUclear Family?
A3. 1. Average family size.
2. Family disposable income.
3. Average family mobility.
4. Amount of time spent at home.
5. Family activities at home.)

31. ...and these are typical replies to the fourth basic question, for a single Key Element only.

(SLIDE:

Q4. Key Attributes of the Key Element, Average Family Size?

A4. 1. By region of U.S.
2. By rural v. urban areas.
3. By income level.
4. By homeowners v. renters.
5. By race.)

32. ...and here are typical replies to the fifth basic question, for the same single Key Element only:

(SLIDE:

Q5. Key Relations of the Key Element, Average Family Size?

A5. 1.Relation to range of family sizes.
2.Relation of present to past average.
3.Relation to income levels.
4.Relation to major market areas.
5.Relation to furniture purchases.)

33. ...and here are typical replies to the sixth basic question:

(SLIDE:

Q6. Key Pattern/Environment Interfaces, Primary Nuclear Family?

A6.
1. Social traditions.
2. Educational practices.
3. Employment structure.
4. Household mobility.
5. Class structure.

34. ...and here are typical replies to the seventh and eighth basic questions.

(SLIDE:

Q7. Key Environmental Resources, Primary Nuclear Family?	Q8. Key Environmental Constraints, Primary Nuclear Family?
A7. 1.Number of jobs.	A8. 1.Family income levels.
2.Location of jobs.	2.Competitors.
3.Number of best prospects.	3.Family's other needs.
4.Location of best prospects.	4.Furniture's durability.
5.Highest-volume furniture stores.	5.Inadequate retail outlets.

)

35. So much for the example. The answers given to the basic observation questions, remember, were answers which might typically have been given by a furniture manufacturer interested in consumption patterns of the Primary Nuclear Family. Quite different answers might have been given by other Observers whose interests differed.

36. Now, here is a review of the discussion of the Observer presented in this filmstrip.

37. Your first task as an ADVENT Observer is to choose a topic or Pattern to observe. Your second task is to clarify your interest in the Pattern and then indicate what you hope to gain by your observation.

38. Your third task as an ADVENT Observer is to select your observation method and then to make the actual observation.

39. Your fourth task as an ADVENT Observer is to make and report a series of critical judgments about the Pattern you have observed, based on your observation.

40. Your critical judgments about the topic or Pattern are reported in the form of answers to the eight basic observation questions shown here. A standard Observation Report Form--ADVENT Form One--is provided for this purpose, as discussed in Learning Module Two.

41. That concludes this filmstrip. The topic or Pattern--the second basic factor in every ADVENT observation--is discussed in the next filmstrip, the one marked Learning Module One, Part III. The narration for this next filmstrip is contained on the other audio cassette in this Module. Please change the tapes now, and make the next filmstrip ready for viewing.

Script Three

0. The narration which follows accompanies the filmstrip marked Learning Module One, Part III.

1. "For some minutes Alice stood without speaking, looking out in all directions over the country--and a most curious country it was.

2. "'I declare, it's marked out just like a large chessboard!

3. "It's a great huge game of chess that's being played--all over the world--if this is the world at all, you know! Oh, what fun it is!'"

4. Alice discovered in Looking Glass Land a world laid out in a neat, regular, orderly Pattern, much like the chessboard pattern shown here. Many different Patterns are expressed in every game of chess.

5. There is the Pattern represented by the chessboard itself. There is the Pattern expressed in the relative positions of the pieces--which changes with every move made. And there are the real but invisible Patterns which represent the legal moves open to each piece at any given point in a game.

6. How can we use the basic concept of Patterns in making ADVENT observations as a part of studying alternative futures? By treating each and every study topic as a Pattern to be observed, we are forced to organize our studies and observations. Organized observation and study, in turn, extends and improves our understanding. Let's see how this works in an example.

7. Shown here is a ten-digit number. Look at it for two seconds, then close your eyes and try to repeat the number aloud.

(SLIDE: 7-1-4-0-3-8-2-9-6-5)

8. Next, here is another ten-digit number. Again, look at it for two seconds, then close your eyes and try to repeat the number aloud.

(SLIDE: 1-2-3-4-5-6-7-8-9-0)

9. If you're typical, you found it much easier to recall and repeat the second number than you did the first number. The explanation is simple: The second number is an extremely familiar Pattern, while the first ten-digit number is not a familiar Pattern.

10. Searching out Patterns in a study topic forces us to concentrate on relationships and on the most critical or essential features of the topic. By stressing relationships and critical features and ignoring or paying less attention to other features, we maximize our understanding about a topic. That is, we maximize our insight into the topic.

11. By improving our understanding and insight about a study topic, we also improve our ability to make better informed guesses, estimates, and forecasts about alternative futures for that topic. Thus when we search out Patterns in observing or studying a topic what we are actually doing is reaching for insights which can improve our foresight about the topic.

12. Nearly any topic we choose to study or observe can be described as a Pattern. Let's apply this Pattern description method to our standard example topic, the Primary Nuclear Family consisting--you will recall--of the father, the mother, and their immediate children.

13. The first Pattern description task is to name the Pattern accurately. Actually, in this example we have already completed this first Pattern description task. There are many different kinds of families--extended, communal, one-parent, and so forth. Our example Pattern, however, is the Primary Nuclear Family--father, mother, and children. Thus we have already given the Pattern a name which accurately describes the Pattern we intend to study or observe.

14. The second Pattern description task is to identify Key Elements in the Pattern for our particular purpose. In the preceding filmstrip--you will recall--we pointed out that different Observers may have widely different interests in any given topic or Pattern. It follows naturally, then, that different Observers may identify different Key Elements for the same Pattern, depending on the nature of their different interests.

15. In this illustration, let's suppose that it is a sociologist who is the Observer. His interest is a professional interest--that is, he hopes to gain by observation an opportunity to improve sociological theory about Primary Nuclear Families.

16. Here are typical Key Elements in the Primary Nuclear Family Pattern as they might be identified by our hypothetical sociologist Observer. Notice that he has kept his list of Key Elements as brief as possible, so that he may concentrate on what is truly most critical. As his study or observation proceeds, he may revise or extend this list of Key Elements whenever he chooses.

(SLIDE: Key Elements In Primary Nuclear Family
[Observer Is Sociologist]

1. Mother.
2. Father.
3. Female children.
4. Male children)

17. We have now completed the first two Pattern description tasks for this example. That is, we have given the Pattern an accurate name and we have identified Key Elements in the Pattern.

18. In discussing the third and fourth Pattern description tasks we will use only one Key Element--the Mother--as an illustration. Remember, though, that a complete Pattern description requires the same full treatment of each and every Key Element in the Pattern.

19. The third Pattern description task is to identify the Key Attributes of each and every Key Element. Our sociologist Observer's judgments about the Key Attributes of one Key Element--the Mother--are shown here. Once again, he keeps his list as brief as he can. Again, he may revise or extend the list whenever he chooses to.

(SLIDE: Key Attributes,Mother,Primary Nuclear Family [Observer Is Sociologist]

1. Age.
2. Health.
3. Socioeconomic level.
4. Educational attainment.
5. Self-image.)

20. The fourth Pattern description task is to identify the Key Relationships of each and every Key Element. Our sociologist Observer's judgments about the Key Relationships of the Mother--one of several Key Elements in the Primary Nuclear Family--are shown here. Once again, he keeps his list as brief as he can. Once again, he may revise or extend the list whenever he chooses.

(SLIDE: Key Relationships, Mother, Primary Nuclear Family [Observer Is Sociologist]

1. To husband.
2. To daughter(s).
3. To son(s).
4. To parents (and in-laws).
5. To community.)

21. And now for this example we have completed all four basic Pattern description tasks required in every ADVENT observation. Notice that we have dealt only with parts of the Pattern, and have not considered the Pattern as a whole. These holistic aspects of any Pattern are covered in describing the Environment factor in every ADVENT observation. The Environment factor is discussed in the next filmstrip.

22. In concluding this filmstrip, let's consider a few other basic aspects which must be dealt with in describing *any* Pattern. One important fact to take careful notice of is that *any Pattern may be expressed and described in many different ways or dimensions*.

23. For example, the Primary Nuclear Family traces definite *Patterns in Space*. The Family occupies a specific dwelling, and its members move about the world in many orderly, regular ways. In these and in many other ways, the Primary Nuclear Family expresses *spatial Patterns*.

24. The Primary Nuclear Family also traces definite *Patterns in Time*. The children grow towards maturity on a predictible schedule. The father and mother grow older, year by year. the Family's day, week, and year present many definitely scheduled and regular details. In these and in many other ways, the Primary Nuclear Family expresses *Patterns in Time*.

25. You should also be aware of how much *room for variety* there is in any given basic Pattern. In the Primary Nuclear Family, for example, the father may be absent for weeks, months, or years at a time--in military service, working abroad, and so forth. Some children in the Family may be from previous marriages. Such factors make an enormous difference in Family life. Yet all these many variations are accommodated within the basic Pattern of the Primary Nuclear Family.

26. Now, here is a *review* of this filmstrip.

27. In every ADVENT observation, *three basic factors* must be considred. They are: the *Observer*, the topic or *Pattern* studied or observed, and the *Environment*--the setting or context of the Pattern. This filmstrip has discussed the *Pattern*.

28. Thinking about any futures study topic as a *Pattern* forces us to *organize our observation* and to concentrate our attention on what *we* decide are the *most important aspects* of the topic, *according to our own particular interest* in it.

29. Searching out Patterns in a topic extends or improves our knowledge and understanding about the topic. Improved knowledge and understanding in turn increases our *insights* about the topic. Finally, *increased insight about a topic improves our foresight* about it--that is, our capacity to think about possible alternative futures involving our study topic.

30. The ADVENT Pattern description method can be used with almost any topic whose possible alternative futures we wish to study. To apply the method,we must complete *four basic pattern description tasks*.

31. Shown here are the four basic pattern description tasks. First, we must *name the pattern accurrately*. Second, we must *identify Key Elements* in the Pattern. Third, we must *identify Key Attributes* for each and every Key Element. And fourth, we must *identify Key Relations* for each and every Key Element.

32. In completing the four basic ADVENT Pattern description tasks, we must never forget that *there are not and cannot be any "correct" or "incorrect answers*. *You* are the Observer, and the items identified *always* represent nothing more or less than *yourown best critical judgment*, based on your own particular interest in the Pattern and on your own observation of the Pattern.

33. Any Pattern--such as the Primary Nuclear Family in our standard example--can be described in many different ways. Patterns may be expressed in *Time*, in *Space*, or in abstract relationships such as those found in every game of chess.

34. The scope of a Pattern may be broad enough to accommodate many significant variations within the Pattern. For example, the Primary Nuclear Family Pattern may be applied to one particular family or may be broadened to include *all* families. Within the basic Primary Nuclear Family, variations such as father-absent families or new families formed by remarriage can be accommodated.

35.That concludes this filmstrip. The next filmstrip discusses the third basic factor in every ADVENT observation--the *Environment*. This next filmstrip is the one marked *Learning Module One*, *Part IV*. The narration accompanying this next filmstrip is contained on the remainder of this audio cassette. Please turn the tape off now, until the next filmstrip is ready.

Script Four

0. The narration which follows accompanies the filmstrip marked Learning Module One, Part IV.

1. "'The time has come,' the Walrus said, 'to talk of many things...

2. "Of shoes--and ships--and sealing-wax--of cabbages and kings...

3. "And why the sea is boiling hot--and whether pigs have wings.'"

4. The famous Walrus and the Carpenter in Alice's Looking Glass Land clearly realized that, even there--the world--or the *Environment*--is absolutely stuffed full of things which *can be* observed and discussed.

5. We all realize that the same thing holds true here in our everyday world. The challenge is to *decide what is important in the Environment*, with respect to any given topic or Pattern whose alternative futures we wish to study.

6. For example, there's an insect concealed in this photograph. Can you discover him? The process of natural selection rewards with survival those insects whose body *Patterns* blend in closely with their natural *Environments*. On the other hand, the process of selection equally rewards--with a square meal--the sharp-eyed bird Observer able to detect the insect's *Pattern* concealed within its *Environment*.

7. The *Environment* is one of three basic factors which must be considered in every ADVENT observation. The other two factors--the *Observer* and the *Pattern*--were discussed in preceding filmstrips. This filmstrip is devoted to the *Environment.*

8. In discussing the *Environment*, we will use our standard example topic, the Primary Nuclear Family Pattern, consisting of the Mother, the Father, and their Children. Once again, we shall assume that the *Observer* is a sociologist whose *interest* in this Pattern is one of improving sociological theory about the Family.

9. The *first basic Environment description task is to decide on the environmental scope or boundaries* of the observation. As shown here, this Observer has chosen simply to limit himself to "Primary Nuclear

Families in the United States." As always, the Observer is free to refine or extend his scope and boundary description whenever he chooses.

10. The Observer's second basic Environment description task is to identify Key Pattern/Environment interfaces. This means simply that the Observer must decide where or how the Environment most affects the Pattern as a whole--and vice versa.

11. When we discussed the Pattern description tasks in an earlier filmstrip, we limited ourselves to describing the individual Key Elements in the Pattern. Now that we are describing the Environment, we can complete our Pattern description by identifying Key Pattern/Environment interfaces for the Pattern as a whole.

12. And here is a list of Key Pattern/Environment interfaces for the Primary Nuclear Family as compiled by our imaginary sociologist Observer. As usual, the Observer has kept his list as short as possible so that he can concentrate on the most critical Pattern/Environment interfaces. And as always, the Observer is free to extend or revise his list whenever he chooses.

(SLIDE: Key Pattern/Environment Interfaces,
Primary Nuclear Family [Observer
Is Sociologist]

1. Social traditions.
2. Educational practices.
3. Employment structure.
4. Household mobility.
5. Class structure.)

13. The third basic Environment description task is to identify Key Environmental Resources for the Pattern being observed. This means simply that the Observer must decide which resources in the Environment are those most critical to the Pattern's maintenance and further development.

14. Here is a list of Key Environmental Resources for the Primary Nuclear Family as compiled by our hypothetical sociologist Observer. As always, the Observer has kept this list as brief as possible so that he can concentrate on the most critical Environmental Resources. And as always, the Observer is free to extend or revise his list whenever he chooses.

(SLIDE: Key Environmental Resources,
Primary Nuclear Family
[Observer Is Sociologist]

1. Income.
2. Shelter.
3. Food.
4. Security.
5. Health care.)

15. The fourth and final basic Environment description task is to identify Key Environmental constraints for the Pattern observed. This means simply that the Observer must decide which factors in the Environment are most apt to disrupt the Pattern or to impede the Pattern's further development.

16. And here is a list of Key Environmental Constraints for the Primary Nuclear Family as compiled by our sociologist Observer. As one final repetition, notice that again the Observer has kept this list as brief as possible so that he can concentrate on the most critical Environmental Constraints. And as always, the Observer is free to extend or revise his list whenever he chooses.

(SLIDE: Key Environmental Constraints,
Primary Nuclear Family
[Observer Is Sociologist]

1. Social traditions.
2. Lifespan.
3. Population density.
4. Resources share.
5. Physical environmental quality.)

17. We have now completed all four basic Environment description tasks for this example. First, we have decided on the environmental scope or boundaries of the observation. Second, we have identified Key Pattern/Environment interfaces. Third, we have identified the Key Environmental Resources for the Pattern. And fourth, we have identified Key Environmental Constraints.

18. Now that we have described the four basic Environment description tasks, let's mention some general considerations which sould be taken into account in describing the Environment of any Pattern.

19. When we discussed the Pattern in a preceding filmstrip, we pointed out that a Pattern often can be described in many different ways or dimensions. The Primary Nuclear Family, for example, traces Patterns in Space, Patterns in Time, and in many other dimensions.

20. This same multi-dimensional aspect of Patterns can be described also in terms of Environment. We can think of any Pattern as occupying many different Environments all at the same time. The Patterns which a Family traces in Space, for example, can be regarded as representing the family's spatial Environment. In the same way, the Patterns in Time traced by a family represent the family's temporal Environment. The family, of course, occupies both the spatial and temporal Environments simultaneously.

21. Here is only a brief, suggestive listing of the many Environments occupied simultaneously by any Primary Nuclear Family.

(SLIDE: Some Important Environments,
Primary Nuclear Family
[Observer Is Sociologist]

1. Geographic Environment.
2. Sociocultural Environment.
3. Physical Environment.
4. Economic Environment.
5. Political Environment.
6. Many others.)

22. Many Patterns whose alternative futures interest us--perhaps even most Patterns--exist in many different Environments all at the same time. As an ADVENT Observer, you should clearly identify and fix the scope or boundaries of each and every Environment which critically affects your particular interest in the Pattern. As always, however, you should limit your list of critical Environments as much as possible. But as always, you are free to revise or extend your list of critical Environments whenever you need to.

23. One other important general consideration of every Environment is the complicated--and sometimes overlapping--relation between Environmental Resources and Environmental Constraints.

24. For example, here again is the list of Environmental Resources for the Primary Nuclear Family we saw before. Notice the first item on this list, Income.

(SLIDE: Key Environmental Resources,
Primary Nuclear Family
[Observer Is Sociologist]

1. Income.
2. Shelter.
3. Food.
4. Security.
5. Health care.)

25. Here is a listing of some of the many ways in which Family Income serves as a Key Environmental Resource.

(SLIDE: Income As Key Environmental Resource,
Primary Nuclear Family [Observer Is
Sociologist]

1. Buys essential goods/services.
2. Provides community status.
3. Supports leisure activities.
4. Many others.)

26. But Income may equally well be a Key Environmental Constraint in the Primary Nuclear Family. Whether Income is a Resource, a Constraint,or both a Resource and a Constraint depends on a number of factors...The nature and extent of Family needs...The amount and security of Family Income...How efficiently Income is spent...and so forth.

27. For example, here is a list showing a few of many ways in which Family Income may serve as a Key Environmental Constraint:

(SLIDE: Income As Key Environmental Constraint, Primary Nuclear Family
[Observer Is Sociologist]
1.Limits community status.
2.Income insecurity stresses family.
3. Earning requires excessive effort.
4.Many others.

28. We have mentioned *two general considerations about the Environment*. *First*, we said that a Pattern may exist in several different critical Environments all at the same time. And *second*, we have said that the distinction between an Environmental *Resource* and an Environmental *Constraint* is--as often as not--strictly a matter of the Observer's best judgment.

29. These general considerations about the Environment remind us once again of a fundamental assumption made in the ADVENT Standard Study Procedure. In studying a topic or in observing a Pattern whose alternative futures interest us, *we ourselves as the Observers must make the final critical decisions and judgments*.

30. There is an important and fundamental difference between *facts* about a topic or Pattern and the *interpretation of facts*.

31. Here is a typical *fact* about a Primary Nuclear Family: This Family's *actual income* last year was $25,000. But what does that *fact mean?* This single fact by itself has little meaning. The *significance* of this fact lies primarily in its *relation to other facts*. How many people in the family? Any big hospital bills last year? Is $25,000 the Family's *typical* annual income, or was last year special, somehow?

32. In studying a topic or observing a Pattern, we need to compile as many useful facts as we can. But deciding *which facts* we need and what the facts add up to when we have assembled them--these decisions are a matter of *personal critical judgment*. For any given topic, there may be many "authorities" or "experts" who have *more facts* than we do about that topic. But when it comes to deciding on the *significance* of those facts for the future--then it is always a matter of individual opinion and best judgment. In this fundamentally important sense, there are *no* experts or authorities on alternative futures.

33. Now, here is a *review* of this filmstrip.

34. The *Environment*--together with the Observer and the Pattern--must be taken into account in every ADVENT observation.

35. Four basic Environment description tasks must be completed in making any ADVENT observation. First, we must fix the scope or boundaries of the Environment, for the Pattern we are to observe. Second, we must identify Key Pattern/Environment interfaces. Third, we must identify Key Environmental Resources for the Pattern. And fourth, we must identify Key Environmental Constraints for the Pattern.

36. We have also discussed some general considerations about the Environment. First, we pointed out that a Pattern may be described in many different ways or dimensions, and that every separate dimension a Pattern traces can be thought of as a different Environment. It is important to identify and fix the scope of every Environment which is significant for your observation.

37. Second, we mentioned that the distinction between a Key Environmental Resource and a Key Environmental Constraint is often difficult to make, and is always a matter of the Observer's own best critical judgment.

38. Finally, we pointed out the fundamental difference between a fact and the interpreted significance of a fact. Many expert observers of a given topic may have many more facts about the topic than we do. But in speculating about the significance of that fact for alternative futures, in the end there is no final authority except our own personal best critical judgment.

39. That concludes Learning Module One. This discussion of the ADVENT Standard Study Procedure is continued and concluded in Learning Module Two. For further information about Learning Module One, please consult your Learning Guide.